THE CHEMIST AND DRUGGIST

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EDUCATIONAL NUMBER.

OUR Annual Educational Number will be published the week ending Saturday, September 3. It will contain full particulars regarding the education and examinations in Pharmacy, Medicine, Dentistry, Veterinary Surgery, and Science. Principals and Secretaries of Institutions and Associations interested in Educational matters are requested to send particulars of their arrangements to the Editor as early as possible. Schools, universities, manufacturers of chemical apparatus, publishers of books, &c., will find the forthcoming issue a splendid advertising medium, and particulars of rates may be obtained on application to the Publisher.

"C. & D." REPRESENTATIVE IN CANADA.

OUR travelling representative was in Halifax, Nova Scotia, when he last wrote, and would visit in succession St. John's (New Brunswick), Quebec, Montreal, Ottawa, and Toronto. He will be in Canada several weeks yet, and if any subscriber to THE CHEMIST AND DRUGGIST wants any special information it should be sent on to us immediately. Our Commissioner cannot do private business, but queries that may be of general interest will be sent on to him.

POSTCARD COMPETITION.

OUR guinea-prize this month will be given for the best draft of a label, composed on the lines of the "Comedone-cream" label on page 35 of "Pharmaceutical Formulas." Subscribers and their employés are eligible to compete; and we may add as supplementary prizes a few copies of the "Formulas," and of our forthcoming book "Diseases and Remedies," if we receive labels worthy of special commendation.

Summary.

THE CHEMISTS' ASSISTANTS' UNION has been organised, and has prepared its rules (p. 259).

SOME NOTES reviewing the closing Parliamentary Session from a chemist's standpoint are given on p. 318.

A GRIMSBY HERBALIST, who described himself as a "manufacturing chemist," has had to pay 5*l*. for his error (p. 265).

THE COURT OF APPEAL has affirmed Mr. Justice North's refusal to grant an injunction in respect of lime-wine (p. 271).

HALFPENNY PACKETS OF BORAX sold in Birmingham were found to contain 25 to 35 per cent. of bicarbonate of soda (p. 265).

THE drug and chemical markets are without animation, owing to the usual summer dulness. Buyers are awaiting the drug auctions next week (p. 326).

CORONER DR. WYNN WESTCOTT says the fact that carbolic acid can be sold by anyone unlabelled is one of the great grievances of the century (p. 258).

A KENNINGTON CHEMIST has been fined for selling Gregory's powder made with the carbonate of magnesia instead of with the oxide of magnesia (p. 265).

WE GIVE PORTRAITS of the late Mr. J. A. R. Newlands, the discoverer of the periodic law; and of the late Mr. Herbert William Seely, a well-known chemist of Halifax (p. 262).

TWO CORRESPONDENTS write to us in support of the suggestion put forward last week by Mr. Vallet that the Major examination should become a qualification for analytical chemists (p. 328).

A SOUTH AUSTRALIAN JUDGE, who had to sentence some men who had fraudulently sold imitations of Williams's pink pills, mixed up an old joke with his criticism of patent-medicine advertisements (p. 261).

THE ISLINGTON VESTRY have cancelled their contract for disinfectants with Messrs. Adcock, Easton & Co. on the report by their analyst that samples taken from the deliveries were deficient in quality (p. 258).

THE COUNCIL OF THE PHARMACEUTICAL SOCIETY OF IRELAND object to an editorial article which appeared in this journal on July 30 on the company question, and they were not reticent with their comments (p. 263). We add a few remarks of our own on p. 323.

A SCOTCH FIRM of aërated-water makers sued a customer for the value of some waters supplied, and were met with a counterclaim for gelatin supplied to chemists who were supposed to be the same firm as the plaintiffs. But the Judge did not allow the counterclaim (p. 260).

JUDGMENT has been given by Mr. Justice Byrne for the defendants in the actions brought by the Bovril Company against the Bouillon Fleet Company and some of their customers for selling an extract of meat in bottles which it was alleged too closely resembled the Bovril bottles (p. 266).

THE PRESIDENT OF THE FRENCH CONGRESS FOR THE ADVANCEMENT OF SCIENCES, the equivalent to our British Association, was a supporter of M. Zola in the Dreyfus agitation. Consequently, when he appeared at Nantes to deliver his presidential address, he was not allowed to get farther than "Ladies and gentlemen" (p. 261).

THE BELFAST MEETING of the British Pharmaceutical Conference, which is fully reported in this issue, has been in all respects a successful meeting. Our account of the proceedings commences on p. 273 and occupies some forty pages. An editorial commentary and summary of the papers commences on p. 320. Portraits of the President (Dr. Symes), the Lord Mayor of Belfast, the Principal of Queen's College, the group of the Belfast Ladies' Committee, the Local Executive, and views of the scenery to be visited on the excursion day are comprised in the pages between 273 and 283. Mr. Payne (Belfast) is the newly-elected President, and Plymouth is to be the place of meeting next year.

English News.

Local newspapers containing marked items of news interesting to the trade are always welcomed by the Editor.

Coroner and the Sale of Carbolic Acid.

Dr. Wynn Westcott held an inquest at Stoke Newington, on July 29, on the body of Mrs. Sarah Ann Legge, who died from the effects of poisoning by a disinfectant (presumably carbolic acid) which had been given her by her husband in mistake for medicine. Evidence having been given by the husband and daughter of the deceased, George Hedger, oilman, of Nevill Road, said he sold the stuff as soluble sanitary fluid. The sale of it was not restricted by any statute, but he would certainly in future put a label on the bottle. Dr. Spencer, who was called in, said he believed the name of the poison was "creosole" or "cresoline." It was sold under various names; but it was practically the same, differing from the pure acid solely in strength. The Coroner said that it was one of the great grievances of the century that anyone could sell carbolic acid without putting a label on the bottle, and there was no penalty attached if they did not. It had been a crying evil for a long time, and the House of Commons had done nothing in the matter. A verdict of death from misadventure was returned.

The Islington Vestry and their Disinfectants.

The Vestry of Islington was occupied far into Friday night in discussing the following recommendations sent up by the Public Health Committee, viz.:—

> That having caused to be analysed the whole of the disinfectants supplied by the contractors (Messrs. Adcock, Easton & Co.), with the result that they have been proved to be below the strength required by the terms of the contract, this committee recommends that the contract be determined forthwith, and that all disinfectants required during the remainder of the current year be obtained from Messrs. Burt, Boulton & Hayward, of 64 Cannon Street, at the prices mentioned in their tender of February 25, 1898.

Mr. Bernard James asked if the samples were taken for analysis immediately on the delivery of the goods, and the Medical Officer said, "No." Mr. James asked if the dozen samples taken were from a dozen separate deliveries, and the Medical Officer said, "Yes." Mr. James: Were the samples analysed on twelve separate occasions? The Medical Officer: They were analysed on two separate occasions. Mr. James: How long have Messrs. Adcock, Easton & Co. supplied this Vestry with disinfectants? The Medical Officer: Since 1885. Mr. Tompkins: For sixteen years The Medical Officer: Of twelve samples analysed only one was according to contract. The carbolic powder, the fine acid, and the carbonised creosote were not up to standard strength. Mr. Tompkins: Might not these goods deteriorate in the keeping? The Medical Officer: The carbolic powder might to a small degree, but ought not show the deficiency as stated by Dr. Teed, our analyst, in his certificate. Mr. Tompkins: Did Dr. Teed make the analysis himself? The Medical Officer: Oh, yes. In reply to further questions the Medical Officer produced the dates on which he had taken samples from the deliveries of the disinfectants, these being in May, June, and July. The Vestry Clerk (Mr. Dewey) here read a long letter from Messrs. Adcock, Easton & Co., asking the Vestry not to hastily judge them. They had always endeavoured to supply goods according to contract, and their instructions to their workpeople were most definite. If the results were actually as Dr. Teed stated, they (the contractors) were very sorry. They pointed to the fact that they supplied the London County Council and most of the Vestries and District Boards of the metropolis with disinfectants, and now produced letters from the public analysts of Clerkenwell, St. Giles's, and St. Luke's testifying to the uniform good quality of the disinfectants supplied to their respective Boards. Mr. J. K. Colwell also sent his certificate of analysis of the goods in question, but this was not read, though it was presumed to be favourable to Messrs. Adcock, Easton & Co. In reply to Mr. Harding, Mr. Mills said there had been a previous complaint four years ago, and though he felt it was a serious matter for Messrs. Adcock, Easton & Co., he could not refrain from moving the recommendations mentioned in the face of the certificate of Dr. Teed. He accordingly moved the first clause:—"That no more disinfectants be ordered from Messrs. Adcock, Easton & Co." Mr. Derham seconded. Mr. Tompkins moved an amendment that the matter be referred back to the Public Health Committee for further consideration. It meant practical ruin for any firm to have their contract annulled as now recommended. He contended that Messrs. Adcock, Easton & Co. should have had earlier notice of the condition of their supplies, and then they could have prevented a repetition. Mr. Adcock, when before the committee, said it was his wish to comply strictly with the terms of the contract. Mr. Stonelake seconded the amendment. Mr. Derham said this practically meant adjourning the question until October. In the end the recommendation of the Public Health Committee was adopted, though there were those who thought Messrs. Adcock, Easton & Co. might have been allowed an opportunity of getting a check-analysis of the impugned goods.

Important to Artificial-food Manufacturers.

The eleventh Universal Cookery and Food Exhibition will be held in the galleries of the Imperial Institute in March, 1899. The exhibition will, as heretofore, be under the auspices of the Universal Cookery and Food Association, of which Mr. W. Burdett-Coutts, M.P., is President. Mr. J. C. Buckmaster, M.A., to whose lectures, delivered at the International Exhibition of 1872, the origin of the cookery-school movement of the present day is traced, is Chairman of the Executive; Mr. Joseph Edmunds is Deputy-Chairman; M. Juste Ménager, *chef* to the Prince of Wales and Chairman of the Universal Cookery and Food Association, is Hon. Treasurer; Mr. Otto Hehner Hon. Analyst; and Mr. Charles Hermann Senn Hon. Secretary. The offices of the Executive Council of the exhibition are at 329 Vauxhall Bridge Road, S.W.

Brighton Association of Pharmacy.

The annual excursion of this Association will take place on August 24. It is proposed to visit Horsham, leaving Brighton at 10 15 A.M., visit the places of interest, dine at the Black Horse Hotel, then drive to Knepp Castle and Park, on to West Grinstead, having tea at the Burrell Arms, thence to Cowfold, and back to Brighton by the 9 P.M. train. Tickets, 10*s*. 6*d*. each (inclusive), can be obtained from Messrs. J. R. Gwatkin, 49 Grand Parade (Hon. Secretary *pro tem.*); W. H. Gibson, King's Road; J. Padwick, Preston Street; and G. B. Savage, 109 St. James Street, Brighton.

Sale of Strychnine.

An inquest was held at Newport (Mon.) on Saturday, concerning the death of William Brownlie, aged 24, a marine engineer, of Glasgow. Mr. Dunbar, manager to Mr. Hicks, chemist, of Duke Street, Cardiff, said the deceased on the previous Tuesday entered the shop, and said he wanted some strychnine to destroy rats on board his ship. Witness served him with a small quantity and explained how the poison should be used. Deceased said he had used it several times before. He signed the poison-book. On the following Thursday deceased was found dead in a field at Liswerry. The jury returned a verdict that the deceased had committed suicide, but that there was no evidence to show the state of his mind.

Selling Oxalic Acid.

John Pugh, a French-polisher, of South Tottenham, was charged at the North London Police Court, on August 4, before Mr. D'Eyncourt with attempting to commit suicide by drinking a quantity of oxalic acid. His daughter gave evidence that he had taken some of the poison, and that a doctor was called in and gave him an emetic which it appeared saved his life. Mr. Hewitt, chemist, of Seven Sisters Road, said he sold the poison to the prisoner. Mr. D'Eyncourt: It is poison, I suppose. The Chemist: Oh, yes, sir; a teaspoonful would kill anyone. Mr. D'Eyncourt: How much did you supply the prisoner with? The Chemist: A quarter of a pound. Mr. D'Eyncourt: A quarter of a pound! The Chemist: Yes; he has for the last fifteen years been purchasing the acid from me in wholesale quantities like this. As a French-polisher he uses it in his business.

He seemed perfectly sober and rational when he came into my shop, and I had no hesitation in serving him. The sale was a perfectly legal one. Mr. D'Eyncourt remanded the accused, in order that the doctor and the chaplain at Holloway might see him.

Chemists' Assistants' Union.

As agreed to at the last public meeting, a provisional council of this Union has been formed, with central offices at the Horseshoe Hotel, Tottenham Court Road. The following officers have been appointed:—Chairman, Mr. E. Whineray; Vice-Chairmen, Messrs. R E. Wright and H. Lloyd; Secretary and Treasurer, Mr. C. E. Pickering; members of committee, Messrs. C. B. Armstrong, H. B. Clegg, S. M. Collins, P. R. Hill, A. L. Jones, T. H. Mallagh, J. G. Middleton, N. Smith, C. E. F. Vallet, and H. A. Yeo. An advance copy of the rules of the Union has been forwarded us, and copies may be had shortly on application to the Secretary. Several of these rules are worthy of note, but special attention is requested for Rule 7, which says that—

> An Honorary Secretary shall be appointed in every large central town to conduct the work of the Union, who will have a vote in any Council decision;

and for Rule 19—

> No qualified member of this Union shall be recommended to sell his services to any company whose directors and shareholders are not duly qualified chemists, or which, in the opinion of the Council, is improperly constructed.

Fires.

On August 4, a fire which quickly assumed alarming proportions broke out in the workshop of a carpenter in Fakenham. The workshop in which the fire originated was completely destroyed with all its contents, and the damage extended to the back premises of Mr. D. Davison, pharmaceutical chemist. One warehouse and part of another were completely burnt out, the front portion of the business premises having a narrow escape. The damage is covered by insurance.

Fire broke out in the early morning of August 5 at the Hardshaw Brook Chemical-works, St. Helens, belonging to the United Alkali Company. The brigade was promptly on the spot, and the flames were extinguished in about half an hour, and before any extensive damage was done. The fire is supposed to have been caused by a leakage of vitriol on some bags of nitrate which were stored in the burner-house.

A disastrous fire occurred last week on the premises of the Albion Drug-stores, Market Place, Shipley. An errand-boy was heating a mixture of beeswax and turpentine over a gas-stove when some of the turpentine spilled over, and a blaze was the result. The efforts of the proprietors to put out the fire were unavailing, so the fire-brigade was summoned. The flames were subdued after half-an-hour's work, but not before damage to the extent of about 150*l.* was done.

To Clean His Teeth.

The Leek Justices had before them on August 5 a man named John Hall, who was charged with stealing a pot of tooth-paste, value 6*d.*, from the shop of Mr. Robert Johnson, chemist and druggist, Stanley Street, Leek. Samuel Johnson, son of the prosecutor, and who assists his father in his business, stated that prisoner entered the shop and asked for a 1*d.* box of ointment. After prisoner had left the shop the pot of tooth-paste in question was missed, and P.C. Oulton, who arrested the prisoner, found the tooth-paste in his possession. Accused was sentenced to fourteen days' hard labour.

Charge of Fraud.

At the Nottingham Guildhall, on August 5, a man named Charles Speet, described as a soap-boiler, was charged with obtaining money by false pretences from five tradesmen, amongst them being Mr. W. Gill, chemist, 207 Radford Road, and Mr. Fred. Coates, chemist, New Basford. The sum in each instance alleged to have been obtained was 4*l.* 19*s.* 9*d.* Prisoner's method of operation was to make inquiries at various establishments about a certain soap made by the Citizen Soap Company which he was anxious to obtain. By promising large purchases of this soap he induced the various traders to stock quantities of the Citizen Soap Company's article, which, it was alleged, was a worthless product manufactured by the prisoner himself. This mode of procedure had been gone through in each case with slight variations; and, after evidence for the prosecution had been given and the Bench had been addressed for the defence, the prisoner was committed to the Quarter Sessions, bail being refused.

Trade-trip.

On August 6, the employés of Messrs. T. Morson & Son, Summerfield Works, Homerton, went for their annual outing by brakes to Ware, Herts. A substantial dinner was provided at the Red House Inn, after which Mr. Tipping proposed "The Health and Prosperity of the Firm." This was seconded by Mr. Harrison, Secretary of the Outing Fund, and loudly responded to by all. Cricket, boating, and other amusements followed, and after tea the home journey was begun.

Cricket.

Stevenson & Howell's C.C. *v.* Davy Hill's C.C.—Played at Brockley on Saturday, August 6. Scores: Stevenson & Howell, 58; Davy Hill, 29.

Allenburys C.C. *v.* Burgoyne's C.C.—Played at Wadham Lodge, Walthamstow, on August 6. Scores: Allenburys, 74 (J. Ware, 21 not out); Burgoyne's, 81 for one wicket, Jones and Barclay being not out at the call of time, with 19 and 56 respectively to their credit.

Medicine Mistakes.

The Brighton Deputy-Coroner (Mr. H. F. Gates) held an inquiry on August 6 into the death of a child who had been given embrocation in mistake for diarrhœa-mixture. The embrocation, which was not labelled poison, was obtained from the shop of Mr. Ambrose Hayward, chemist, Southover Street, who said it had been supplied either by himself or his brother. It was an ordinary embrocation for external use. It was usual to put embrocation in a special fluted poison-bottle with a label stating that it was for external use only, but people coming for pennyworths as a rule brought their own bottles. Dr. Frazer, who was called in, said the child had died of perforation of the stomach due to the action of the embrocation, which contained an irritant, but not a scheduled poison. A juror was of opinion that if the embrocation had been supplied in a blue poison-bottle the mistake would not have occurred, and the Deputy-Coroner said he was of the same opinion. The jury returned a verdict of death from misadventure, adding a rider to the effect that chemists should be more careful in supplying such things.

On August 4 a case of accidental poisoning took place in Bath, a little boy named Grant having taken the contents of a bottle which contained an eye-lotion. The bottle had been brought in a few minutes before by an elder brother and was left lying on the table, when the child seized it and drank the contents with fatal results. An inquest was opened at the Guildhall on August 5, but, after evidence by the mother had been given, it was adjourned for a week.

The Leeds Coroner held an inquiry on August 9 into the circumstances attending the death of Mr. John Heaton (27), currier, Liversedge, which took place the previous morning. The evidence showed that the deceased had been advised to take castor oil. On Monday morning his wife left him for a few minutes, and later found him on the couch in the room in a state of collapse, and unconscious, though she had left him in the kitchen. He died in a few minutes. Small bottles, one containing castor oil, and another, with the label mostly torn off, containing prussic acid, were found in the cupboard. Deceased, it was believed, had bought the prussic acid to kill a dog, and it was thought he had taken it in mistake for the castor oil.

Chemist's Window Smashed.

Early on Tuesday morning serious damage was done to the shop-front of Mr. Thompson, chemist and druggist, Dover, through a water-cart belonging to the Corporation colliding with it. In trying to pass some horses the driver of the cart was forced on to the pavement, and the vehicle being driven against Mr. Thompson's shop knocked down the shutters, shattered the plate-glass front, and scattered part of the stock on the pavement.

Irish News.

Local newspapers containing marked items of news interesting to the trade are always welcomed by the Editor.

Personal.

Mr. Gilbert J. Davies, 2 Lower Abbey Street, Dublin, has been appointed agent in Ireland for Messrs. J. & E. Atkinson (Limited), 24 Old Bond Street, London.

The Highest Tenders Win.

The New Ross Guardians had before them, at their last meeting, four tenders for the supply of medicine to the union until March 25. These were from Messrs. P. A. Leslie & Co., Dublin, Hunt & Co., Dublin, the proprietors of Hadden's Medical Hall, New Ross, and W. G. Whitney, New Ross. Messrs. Leslie's tender was not considered, as the manner in which that firm supplied the goods during last year was not considered satisfactory. Thirty-four items of the remaining three tenders were then taken promiscuously, and it was found that Messrs. Hunt's prices amounted to 1*l.* 5*s.* 7*d.*, Mr. Whitney's to 2*l.* 2*s.* 1*d.*, and Mr. Hadden's to 2*l.* 3*s.* 1*d.* The Guardians were divided in opinion as to whether Mr. Whitney should have the whole contract, but it was ultimately resolved that the contract be equally divided between the local men, Messrs. Hadden and Whitney.

Irish Calcium Carbide.

A new chemical company, called the Irish Calcium Carbide Company (Limited), has been formed at Collooney, with a share-capital of 60,000*l.*, to produce calcium carbide for home and foreign use. The directors say they will be able to declare a 20-per-cent. dividend, as the article is coming more and more into general use, and bids fair to be the medium for lighting the world in the future.

Contractors on the Boards.

The Local Government Board have informed the Guardians of the Cork Union that it is illegal to enter into a contract with a firm a director of which is a member of the Board of Guardians, and that a Guardian of the union so circumstanced is liable to a penalty of 100*l.* Recently the question of the supply of drug-sundries to the union by a local firm represented on the Board was discussed at some length, but the decision then given by the Board's solicitors was directly opposite to that now given by the Local Government Board.

Apothecaries' Hall of Ireland.

At the annual meeting of the Governor and Council of the Apothecaries' Hall of Ireland, convened by the Act of Incorporation, the following were elected office-bearers for the ensuing year:—Governor: James Raverty; Deputy-Governor: Hugh A. Auchinleck; Council: Messrs. John Evans, W. F. Furlong, F. D. Finucane, J. A. Johns, R. Montgomery, R. J. Montgomery, C. F. Moore, M. O'Flaherty, C. M. O'Brien, J. Shaw, J. S. Stritch, S. M. Thompson, C. R. C. Tichborne (Representative on General Medical Council), and R. Montgomery, Secretary.

The Listowel Drug-contract.

The Local Government Board have written to the Listowel Board of Guardians, reminding them that they have not yet furnished any satisfactory reason for their action in accepting Mrs. English's tender, which was 18 per cent. higher than that of Messrs. Leslie & Co. They request that the Guardians will reconsider their position, as a transaction of that kind is calculated to shake the confidence of the public in the fair play and straightforward dealing of Guardians, and is likely to prevent that brisk competition for union contracts which it is desirable to promote. The Guardians reply that Mrs. English's tender was accepted as she had previously given full satisfaction as a contractor, and that her tender was recommended by those who had examined all the tenders.

Scotch News.

Local newspapers containing marked items of news interesting to the trade are always welcomed by the Editor.

Dispensing by Electricity.

A firm of chemists and druggists in the north of Scotland make the following extraordinary announcement:—"——— beg to inform the medical profession and public that they now supply medicines and dispense prescriptions at any hour of the night by simply ringing the electric night-bell." This is "dispensing made easy" with a vengeance.

Distinct Firms.

The recent action of James Robertson & Co. *v.* R. Cockburn & Co., just decided in the Edinburgh Sheriff Court, is of some interest to Edinburgh pharmacists and others. During September and October of 1897 the firm of James Robertson & Co., aërated-water manufacturers, supplied waters to the firm of R. Cockburn & Co., Italian warehousemen, Frederick Street, to the value of 15*l.* 0*s.* 9*d.*; and upon Mr. Harry Rawson, as subsequent sole partner and assignee of James Robertson & Co., aërated-water manufacturers, applying for payment he was met by a counterclaim for 18*l.* 6*s.* 7½*d.*, being the price of gelatin supplied by Cockburn & Co. to James Robertson & Co., manufacturing chemists. This contra account extended over June, July, August, and September. Mr. Rawson having repudiated the gelatin-account and raised an action for his water-account, Messrs. Cockburn & Co. pleaded that the firm of J. Robertson & Co., chemists, and the firm of J. Robertson & Co., aërated-water makers, were one and the same firm; that they occupied the same premises, and consisted of the same partners, and that in any case the partners, and especially Mr. Rawson, had acted in such a way as to induce the public, and particularly Cockburn & Co., to believe that there was but one firm; and they further pleaded that in consequence of such actings, they (Cockburn & Co.) had been led to order waters in the belief that the gelatin-account would stand against the water-account.

The pursuers pleaded, in reply, that the firms were distinct and separate, in respect that at May, 1897, Mr. Thomson, chemist, assumed Mr. Rawson as a partner with him in the water business, but retained the capsule business in his own hands; that the gelatin had been supplied to Mr. Thomson's firm alone and on the footing that it was to be paid for in cash, and was not supplied on the understanding either that Mr. Rawson would be liable for the price or that it would be paid for by a supply of waters. Further, that the waters were ordered in the usual way from the water-firm's traveller; that if Cockburn & Co.'s object in ordering waters was to recoup themselves for the gelatin, that was an intention on their part only, and was not disclosed to Mr. Rawson, who acted in ignorance of the transactions in gelatin.

Sheriff-Substitute Hamilton, after a proof, gave decree for 15*l.* 0*s.* 9*d.* in favour of Mr. Rawson's firm, with expenses.

Messrs. Cockburn & Co. appealed to the Sheriff (Ruthfurd), who has now affirmed the judgment.

WOMEN DOCTORS IN RUSSIA.—A decree has just been issued in Russia permitting women physicians to enter the Government service. By this law women in Russia have won an important privilege, and it is expected that this will be the forerunner of other extensions.

PRICE OF AMMONIA.—At a meeting of the South Metropolitan Gas Company, held on Wednesday, the report stated that 12,016*l.* 19*s.* 6*d.* had been received for the sale of sulphate of ammonia and 15,188*l.* 15*s.* for the sale of ammoniacal liquor. On December 31, 1897, the company had 20,336 butts of ammoniacal liquor in stock; 149,592 butts were made in the half-year, 66,773 butts were used, 94,158 butts were sold, and there were 8,997 butts in store on June 30. In moving the adoption of the report, the Chairman (Mr. G. Livesey) said the price of ammonia had improved. It had fallen to a very low figure, but it was better now than a year ago.

French News.

(*From our Paris Correspondent.*)

ACETYLENE-EXPLOSION.—The Paris Omnibus Company is making experiments at Ivry, near Paris, with a series of acetylene-gas apparatus, which are intended for use at its various depôts and in omnibuses. A few days ago one of the generators exploded and injured a mechanic, though not seriously. The cause of the accident has not yet been definitely traced.

NEW SCIENTIFIC DIPLOMAS.—Some time ago the Superior Council of Public Instruction decided that, in addition to the diplomas awarded by the State, the Universities can give degrees of a purely scientific nature. Taking advantage of this, the Lille University has decided to institute a diploma of Licentiate Chemist, and others of a like nature. These diplomas confer none of the rights or privileges attaching to the official degrees, and serve principally to show that the holder has gone through a certain course of study.

A PRESCRIBING PHARMACIST.—A Havre pharmacist and his assistant have been convicted of illegally practising medicine. The assistant, it was proved, went to the house of two ladies and, after a consultation, prescribed and delivered certain medicines. He had also served a venereal remedy to a gentleman who, "attracted to the pharmacy by posters promising the cure of a disease," explained his symptoms and was supplied with certain medicaments. More than this, the assistant guaranteed their effect and promised to supply others free if those sold did not cure the patient. A third accusation, of supplying "a remedy for bronchitis," "did not appear sufficiently established." That the Public Prosecutor merely wished to satisfy the local medical profession "and make an example" would seem evident from the fact that the fine of 4*l.* apiece inflicted by the Court on pharmacist and assistant is only payable in five years' time.

"LADIES AND GENTLEMEN" AT NANTES.—The French Congress for the Advancement of Sciences met last week for its annual session at Nantes. M. Grimaux, formerly Professor of Chemistry at the Paris Ecole Polytechnique, was the President. It may be remembered that M. Grimaux was one of the scientific men who supported M. Zola in his protest against the sentence on ex-Captain Dreyfus, in consequence of which he lost his position at the Ecole Polytechnique. He is a man of advanced years, with a long unblemished career, and of course a high scientific reputation, or he would not have been elected to the position he occupied. The evening before the Congress commenced, about 200 persons assembled outside the hotel where M. Grimaux and M. Yves Guyot were staying, and commenced a manifestation. "Down with Grimaux! Resign!" was the cry. When the Congress met last Thursday afternoon at the Grastin Theatre for the opening ceremony, the manifestations were still more violent, and M. Grimaux was unable to pronounce a word of his presidential address on the "Chemistry of Infinitely Small Things and the Microbian Theories," although an attempt had been made to only admit persons having a special invitation. The Mayor, M. Etiennel, had made an opening speech in which he made no mention of M. Grimaux's name. Then M. Grimaux rose and got as far as "Ladies and gentlemen," but no further, and then ladies and gentlemen of the famous city of Nantes gave to the world the unusual spectacle of the hosts insulting their invited guests. The local authorities knew that a manifestation had been organised, but were apparently unable or unwilling to interfere. Finally, the members of the Congress had to retire, and they met again at one of the local schools, where M. Grimaux made his speech with closed doors to an audience entirely composed of members of the Association, and as the manifestation continued in the street he afterwards left the school by a side-door. In the evening the Municipality gave a reception at the Town Hall to the Congress, but the President did not attend. The trouble continued in the streets during the evening, and then the police and a company of mounted dragoons were called out to keep order. Included in the programme of the Congress was a visit to the interesting town of Clisson, but the Mayor of that place wrote that if M. Grimaux came with the party the gates of the town would be found closed.

Australasian News.

THE DENTAL REGISTRATION BILL of New South Wales has been sent to the New South Wales Legislative Assembly with a request from the Legislative Council that it may be taken up at the stage which it reached before the prorogation. The Victorian Dentists Act Amendment Bill is to be introduced into Parliament at an early date

N.S.W. PHARMACY BOARD ELECTION.—There are two new candidates for election to this Board in opposition to the retiring members, Messrs. Williams and Butcher. The newcomers, Mr. G. S. C. Wells and Mr. H. A. Rose, both of George Street, Sydney, base their claim to the suffrages of registered chemists on the ground that they are opposed to the Pharmacy Board being dominated by and made subservient to the Pharmaceutical Society.

LAUGHING-GAS FOR THE COLONIES.—An Australasian Nitrous-oxide Gas Company has been formed and a complete plant for the manufacture of the gas has been imported. Operations have been commenced in South Australia, and distributing-arrangements have been made for the colony of Victoria, but not as yet for the other colonies. The price will be lower than that of the imported gas, as the risk and expense of carriage as deck-cargo is avoided, while the cylinders will be of uniform size.

IMPURE ENGLISH CHEMICALS.—The annual report of Mr. J. Brownlie Henderson, Queensland Government analyst, states that, as in previous years, great difficulty was experienced by him in securing pure chemicals for analytical work, those ordered from England being more or less contaminated with impurities, necessitating the making of pure chemicals in the laboratory—a tedious and expensive operation. Surely Mr. Henderson has been unfortunate in his choice of English chemical-firms.

ACTION FOR DAMAGES.—Letitia Henrietta Williams, widow and administratrix of Dr. Samuel Irvine Williams, has commenced an action in the Supreme Court against James Christopher, of Queen's Parade, Clifton Hill, claiming 3,000*l.* damages as compensation for the death of her husband, which she alleged was due to the negligence of the servant or agent of the defendant. On June 24 an application was made in the Practice Court on behalf of the defendant to remit the case to the County Court for hearing. The Judge was told that investigations showed that the estate of Dr. Williams was insolvent, his only assets consisting of books and instruments valued at 5*l.*, certain debts valued at 60*l.* 6*s.* 6*d.*, and the goodwill of the medical practice valued at 5*l.* There were also debts due by the deceased amounting to 142*l.* 6*s.* The Chief Justice remitted the case to the County Court for hearing.

THE JUDGE AND THE PINK-PILLS ADVERTISEMENTS.—Two men were found guilty at Adelaide on June 13 of having committed a fraud on certain people by selling them pills of a pink colour labelled "Dr. Williams's Prize-box of Pink Pills," and were sentenced by the Chief Justice to three months' imprisonment each, but one of them was afterwards released under the First Offenders Act. In the course of his judgment the Chief Justice made some remarks on what he alleged were the advertising-statements of the Dr. Williams Company. Had the case been against the company instead of against the public, he said, he would have been inclined to pass a nominal sentence only. "No one with a sense of truth," he added, "could justify the representations made by the company in the pamphlets which had come before the Court." He quoted a statement which he professed to have read in one of these pamphlets, to the effect that broken limbs had been cured by the patient taking the pills after twenty-two medical gentlemen had been called in in vain. Concerning this the Dr. Williams Company write to *The Chemist and Druggist of Australasia* to declare that no such statement as the one imputed to them, "that broken legs can be cured by Dr. Williams's Pink Pills," has ever been made by them in any shape whatsoever. The statement that Dr. Williams's Pink Pills had cured a case given up by twenty-two doctors has been made, and is true, "and," they say, "(with due respect) if the Judge doesn't like it, it is the facts his Honour must quarrel with, not with us."

Marriages.

Corfe—Hunton.—On August 3, at Holy Trinity Church, Reading, Alfred Frederick Corfe, chemist and druggist, Gabriel's Hill, Maidstone, to Clara Emily, daughter of Mr. F. W. Hunton.

Taylor—Garland.—On August 9, at Bradford, by the Rev. T. G. Hunter, Arthur Frederic Taylor, chemist and druggist, Bradford, to Ada Maude Mayenne, eldest daughter of the late Mr. John Garland, Mudford, Somerset.

Deaths.

Hickmott.—Drowned while yachting at Grenada, West Indies, Mr. Albert Hickmott, late of Tunbridge Wells. Mr. Hickmott was, prior to leaving England five years ago, engaged as assistant in a chemist's establishment at Tunbridge Wells.

Need.—On August 7, the wife of Mr. John Need, chemist, Malvern. Aged 41.

Newlands.—On July 29, at Clapton, Mr. John A. R. Newlands, the chemist who shares with Mendeléef, Lothar Meyer, and De Chancourtois the honour of having indicated the periodical law of the elements. Newlands published his first note on the subject in 1863, and in 1866 more fully developed his ideas by a paper on "The Law of Octaves and the Causes of Numerical Relations among the Atomic Weights," which he read before the Chemical Society on March 1, 1866, Except that Mendeléef insisted much more than Newlands. and worked his ideas out much more elaborately, the observations of the Russian chemist were no more ingenious than those of his English predecessor. The Chemical Society, however, rather discouraged Newlands's theory, and did not even print his paper in their *Journal*, on the ground that it was of a purely theoretic character. It was not until 1887 that the injustice was to some extent remedied by the award of the Davy medal by the Royal Society to Mr. J. A. R. Newlands "for his discovery of the periodic law." Mr. Newlands was by no means soured by the long scientific neglect which he suffered. He was of a cheerful and enthusiastic nature, and in his earlier days had been an energetic supporter of various social reforms in England, and was one of the English volunteers who fought for Italian liberty under Garibaldi in 1860. Through his mother he had Italian blood in his veins, but his father was a Glasgow clergyman. Mr. Newlands was in his 61st year. His principal practical work in chemistry had been in connection with sugar refining.

Seely.—At Halifax, on August 4, Mr. Herbert William Seely, F.C.S. Aged 36. Mr. Seely's death was very sudden and totally unexpected. He arrived home from his shop on the night before his death shortly after 8 o'clock, and at 10 returned to his pharmacy to make up a prescription which was brought to his house. He prepared the medicine and gave it to the messenger, and nothing more was heard of him until next morning, when his dead body was found behind the dispensing-counter by the porter. Dr. Dolan, who was called in, said death must have occurred some time previously, and attributed the cause to heart-disease. An inquest was held on August 12, and a verdict of death from natural causes returned. Mr. Seely was born in Lincoln, and served his apprenticeship with Messrs. Battle, Maltby & Bower, of Lincoln, and after the finish of his term he served some time there as an assistant. He removed to Halifax eight or nine years ago, taking over the pharmacy of Mr. Parkin, in Southgate, where he built up a large and lucrative business. Mr. Seely took little interest in public affairs, but was a keen supporter of the Halifax Chemists' Association, and at one time held the position of Secretary. He was also the local representative of the P.A.T.A., an auditor of the Halifax Plate-glass Association, and a member of the St. James's Lodge of Freemasons. He leaves a widow and one son.

Snaith.—At Boston, Lincolnshire, on August 1, Mr. Pishey Snaith, chemist. Aged 76. The late Mr. Snaith was a quaint, old-world character, well known in Lincolnshire for his enthusiasm on the subject of horse-breeding. He was one of the oldest tradesmen in Boston.

Van Voorst.—At Utrecht House, Queen's Road, Clapham Park, on July 24, Mr. John Van Voorst, in his 95th year. Mr. Van Voorst was well known to the last generation as a bookseller and publisher in Paternoster Row. Amongst the best-known scientific works which he published were Attfield's "Chemistry," Bell's "History of British Quadrupeds," Yarrell's "British Birds" and "British Fishes," and several other recognised natural-history classics. Mr. Van Voorst retired from business many years ago.

The Alleged Discovery of the secret of manufacturing chemical foods will, it is generally supposed, be very bad for butchers, bakers, and grocers, whose occupations will be gone. But according to Dr. Oldfield, the vegetarian authority, it will be still worse for chemists. After explaining the scheme of nature, the doctor said that in future "the chemist will take the place of the vegetable." It may be old-fashioned, but we must admit a slight disinclination to partake of boiled chemist.—*Globe.*

Pharmaceutical Society of Ireland.

THE monthly meeting of the Council was held on August 3 Present: Mr. R. J. Downes (President), in the chair, Mr. Beggs (Vice-President), Messrs. Bernard, Hayes, Kelly, Porter, Ryan, Wells, Professor Tichborne, and Dr. Walsh.

THE POISONOUS SUBSTANCES BILL.

The PRESIDENT said that since they last met they had had as providential a deliverance as the British nation had from the Spanish Armada. On the last occasion they had before them the Poisonous Substances Bill, introduced by the Government, and they directed that steps should be taken to have circulars issued to members of Parliament, and to their licentiates and others, calling on them to give the strongest opposition to the measure. That was done, and after the circulars had been printed the Government announced that they were not going to proceed with the Bill. He therefore thought it would be useless to go to any further expense in the matter, because what would be done would be out of date by the time that the new Bill, which he was informed that the Government intended to introduce next Session, would come on.

THE LORD CHANCELLOR AND THE *C. & D.*

They also anticipated the action of the Lord Chancellor of England in connection with his proposed amendment of the English Pharmacy Acts Amendment Bill. He (the President) thought there would be considerable difficulty in making the proposed clause applicable to the purpose which the Society required, because he did not see how an amendment of the English Act could be extended to Ireland. He accordingly wrote to the Lord Chancellor of England pointing out those difficulties; and he had no doubt that that representation weighed with him, for in his address he mentioned that one of the difficulties was the extension of the clause to Ireland. The English Society also objected to having the clause put into their Bill, particularly as it was one that did not suit their purposes. He (the President) was astonished when he saw the draft of the clause. It gave absolute authority to limited companies to carry on business; and one of the difficulties that the Lord Chancellor saw was that as he had drafted the clause, which was simply an adoption of what had been improperly called the "widows' clause," it did not provide for the placing of the companies upon the Society's register. Altogether it appeared to him that the Lord Chancellor completely misjudged what he intended to do or thought could be done by the clause which he proposed. It was a clause that would have given them (the Society) completely away, and he suspected that there was an earnest desire on his (the Lord Chancellor's) part to get pharmacy out of the way, treating it as a trade, so that he could deal with the claims of the medical profession afterwards, for if once the pharmacists were tied and bound they could not interfere with the privileges extended to the medical profession. He felt bound to notice an article contained in THE CHEMIST AND DRUGGIST, which was the organ of the Society, and to dissociate them from the remarks contained in it. He did not approve of the remarks in the article as regarded the English Society or the tone of them, and he entirely dissented—and he thought the Council would dissent—from the views of the writer. The article said:—

> We suspected last week, and it is now admitted, that the most influential objection to the Lord Chancellor's proposal to amend the Pharmacy Act by a clause to provide against its infringement by companies came from the Council of the Pharmaceutical Society.

He (the President) was certainly pleased to know that they did use their influence to oppose it. Then the writer said, referring to particular Acts:—

> It means that the Council and their intimate friends were so eager to get their paltry little Bill passed that rather than risk it they preferred to reject the assistance which the Lord Chancellor and Lord Herschell spontaneously offered them towards the accomplishment of what has always been professed as the ultimate purpose of the measure.

Whatever the Lord Chancellor proposed to do, he did not see that his clause would have compassed what the Society wanted.

> But could not the representatives of pharmacy have laid such arguments as this before the Lord Chancellor? He clearly enough withdrew his amendment with reluctance; his warmest support, we gather, came from Ireland.

He (the President) did not know what was the authority for that statement. Certainly, as far as that Society was concerned, whilst they wanted their own clause, they were not supporting the Lord Chancellor in the amendment he was proposing, and of which they had no cognisance.

Mr. BERNARD: In an Act which did not apply to us.

The PRESIDENT said the article went on:—

> And he was undoubtedly willing to do what reasonably could be done to secure for pharmacy its rightful position. We are afraid it was impossible to ask at this date that companies should not be allowed to own chemists' and druggists' businesses. Twenty years ago that could have been pressed with much more chance of success than now. But it might still have been feasible to enact that no unqualified person should be entitled to be a director of a company formed for the object of carrying on a pharmaceutical business. If for any reason which does not occur to us so much seemed impracticable, it might at least have been required that the managing director of any such company should be qualified. His qualification is of infinitely greater importance to the public than is that of the assistant, who merely carries out his commands. Either of these provisions would go a long way towards remedying the grievance of which we complain. It is likely enough that the Lord Chancellor would have adopted one such amendment of his clause, and it is far from certain that the Houses of Parliament would have rejected it. At all events, the opportunity was offered to test the opinion of our legislators, and it has been declined by the Pharmaceutical Society of Great Britain.

His (the President's) contention was that that was giving away the whole question. Their contention was that the proprietor or proprietors of establishments should be qualified men. That was the law at the present time, and it was at that point that they wanted to keep it. Qualified directors, or even a qualified managing director, would not be sufficient to protect the public; but, worse, it would be a giving away of their position altogether. The article then said:—

> The pharmaceutical associations of the country gave loyal and invaluable aid to the Council of the Pharmaceutical Society in the matter of this amending Bill. But the large majority of the members voted for it on the explicit or implied assurance that it was to pave the way for some legislation that would be of substantial value. If they maintain their enthusiasm in the face of this betrayal—for the conduct of the leaders deserves to be so designated—they are simply impervious as to facts.

As President of the Society—or, rather, as an individual—he (Mr. Downes) protested *in toto* against that article, and he asked the Council to dissociate themselves from it, because it appeared in the organ of the Society, and they would be credited with what was said if they did not do so. The position they had maintained was that unqualified persons kept open shop, and that when they were meddled with they protected themselves by going under the cover of the Companies Acts. The amendment proposed by the Lord Chancellor would have simply amounted to providing that if those gentlemen registered themselves they would have full qualification and a full right to carry on a business for the carrying on of which they would have been prosecuted. If that was his intention there was not the least use in meddling in the matter. Their contention was based on the fact that the poison laws of the kingdom from first to last had recognised it as obligatory that the proprietors of establishments selling poisons should be qualified persons, and if they departed one inch from that they gave away their whole ground.

Mr. WELLS said he was very pleased indeed that the President had acted as he had. He (Mr. Wells) was very much astonished when he read the article which had been referred to, and he should be very sorry if it were not replied to, for it undoubtedly represented them as in favour of what the Lord Chancellor wanted to do. He should like the licentiates to know that they were not in favour of it: they would be traitors if they were. What they wanted to get was a very different thing; and he quite agreed with the President that the little game of the Lord Chancellor was to get them provided for so as to satisfy certain members of Parliament and others, and then to do what he would perhaps have to do whether he liked it or not—namely, to give the medical profession what they were asking for.

The PRESIDENT: And which we are asking.

Mr. WELLS: And which the President has been the means of starting. It was all due to his action, and when the medical bodies should take the matter up they would perhaps have some weight with Parliament. If a clause should be put in for them, it would cover the Society also. At all events, it was due to their licentiates that they should dissociate themselves from any sympathy with such an amendment. If such law should be passed, he for one would not bother himself about the carrying out of pharmacy-law any longer. It would be a dead letter, and a dead letter let it be. But, although the matter had dropped for the present, they ought to keep working it up. They should induce their licentiates to speak to their members of Parliament on the subject. The article said that it was not likely they would get the protection they were asking for so late in the nineteenth century. But were not bricklayers and masons, from one end of the country to the other, getting the protection that they (the Council) were asking? He read in a police report that a workman was thrown out of employment because he would not join a trade union; and they were told by high judges in the land that that was legal, and that people were within their rights in coercing workmen to join unions. If barristers and tradesmen were to be protected, the Society should be protected. It would be more for the benefit of the public that they should receive protection than in the other cases.

The VICE-PRESIDENT: Has he not promised to bring in a fresh Bill?

The PRESIDENT: He has promised to bring in a Bill to cover the whole ground.

Mr. WELLS: In the meanwhile, we ought to work up all our members. I have had letters from gentlemen in the South, one of whom said he would try to get hold of Mr. Dillon.

Mr. KELLY said they should give a flat denial to the article in THE CHEMIST AND DRUGGIST. Honesty in high places seemed now a rare thing. Having regard to the education that was necessary to qualify a man even to sell poisons, it was a very wrong thing on the part of the organ of the Society to put words into their mouths which were certainly the very opposite to what they wished. They were too quiet in this matter and in every other, and they must make themselves felt if they wanted to get redress. If they were to be made to register men who had never spent an hour at the business, so as to enable them to do what as individuals they could not do, it would amount to a lack of honesty in high places.

The subject then dropped.

Metric Weights and Measures.

A letter from the Decimal Association enclosed a form of petition to the Government in favour of the adoption of metric weights and measures in this country.

The President's Letter to the Lord Chancellor

A letter from the Lord Chancellor of England acknowledged the receipt of a letter which had been addressed to him by the President protesting against his Lordship's lately-proposed amendment of the English Pharmacy Bill.

The REGISTRAR read the letter, which has already been published.

The VICE-PRESIDENT: I think we ought to approve of the President's letter.

On the motion of the VICE-PRESIDENT, seconded by Mr. PORTER, the letter was approved.

No More Schools Recognised.

A letter from Dr. A. B. Griffiths, principal of the Brixton School of Chemistry and Pharmacy, applied that certificates of attendance at the chemistry, botany, and materia medica lectures of that school should be recognised.

Mr. HAYES: Have we not an order on the books that for the present we will not increase the number of schools whose certificates we recognise? I think we had better adhere to it.

A Donation

was received from the Pharmacy Board of Victoria of a copy of their report for 1897, and thanks were voted to the donors.

The Anti-Company Pharmacy Crusade.

The PRESIDENT moved—

> That a special meeting of the licentiates of the Society be called in Belfast during the Conference week to protest against the amendment proposed by the Lord Chancellor in connection with the English Pharmacy Bill, and also to form a Parliamentary Committee to raise a special fund and to co-operate with the Council in promoting the interests of the Society in Parliament.

He brought forward this motion in order that its merits might be discussed. It occurred to him that they would be able to obtain a larger and more representative meeting of members of the Society during the Conference week in Belfast than they could possibly get on any other occasion, and that it would be advisable to have such a meeting in order to voice their protest. It would include members from all parts of the country. He had written to Mr. Montgomery as to the time and place for the meeting, but had not yet received a reply from him.

Professor TICHBORNE: Would the meeting be in connection with the Conference?

The PRESIDENT: Certainly not. It would be a meeting of our own Society. I would not mix it up with the Conference at all.

Mr. WELLS remarked that it had been suggested at more than one Conference that a day should be set apart for pharmaceutical politics, but the idea had never been carried out. The difficulty he saw about this proposal was that the time would be so fully occupied with the business of the Conference that gentlemen would not be able to find time for the meeting. No doubt the Society had a fair number of members in Belfast. As to the proposal of a fund he would prefer not to look for outside help. They would not find it so easy to get up a guarantee fund. If people would not give 1*l.* a year for membership of the Society, they would not give it to a guarantee fund.

Mr. BERNARD: It is a case of never venture, never win. We must do something. Another advantage will be that you will have a large number of representatives of the English press at Belfast.

Professor TICHBORNE seconded the motion of the President, which was altered so as to read, "that a special meeting may be called in Belfast," and by adding words at the end leaving the arrangements for the holding of such a meeting in the hands of the Vice-President.

In that form it was unanimously agreed to.

No Quorum.

The election of an examiner in Pharmaceutical and General Chemistry for the licence was postponed until the next meeting.

Other business was not disposed of, owing to the retirement of members not leaving a quorum.

COMMERCIAL TRAVELLERS IN PERU.—In the South of Peru commercial travellers are afforded every facility. They are allowed to enter with their samples, on presenting through a responsible agent to the Custom House an official request to pass so many packages of samples. These are examined and valued by the officer named, and then a bond is presented by the agent, who undertakes to pay the amount of the valuation of any of the samples that may not be re-shipped within the term specified—generally ninety days.

WEST AFRICAN KOLA.—In an account of a tour made last year by two travellers through the Lagos hinterland the following particulars are given of the kola-tree met with on the journey:—"Passing through Ikere, an important town in the Ekiti country, and a centre of the rubber-industry, we found the kola-nut tree (the Abata variety) on every hand, and one often walked through groves of it before entering a town. The trees were all in the most flourishing condition, always bearing heavy and abundant crops. Indeed, the Ekiti country is famed for its kola-trees, and the cultivation of them is brought to great perfection by the natives."

Legal Reports.

The Pharmacy Act.

The Description "Manufacturing Chemist."

At the Grimsby County Court, on August 2, before Judge Shortt, the Pharmaceutical Society of Great Britain brought an action against J. Austin, a herbalist, of 335 Cleethorpe Road, for the penalty of 5*l.* under the Pharmacy Act, 1868, for assuming the title of chemist, by placing over his open shop the words "manufacturing chemist." Mr. T. R. Grey, barrister, appeared for the Society, and Mr. White represented the defendant. Jonathan Mitchinson, an inquiry agent, of 7 Sefton Street, Hull, deposed that, acting under instructions from the plaintiff Society, he went to the defendant's shop on June 15. He saw the words "manufacturing chemist." He went inside the shop, and bought a small quantity of neuralgic mixture—which counsel said contained chloroform—and other small medicaments. Mr. White admitted the facts, but stated in explanation that his client "was a kind of herbalist and that kind of thing." He had lately decided to go into the business of the manufacture of chemicals, and having occasion to have his shop painted he had the words "manufacturing chemist" put up in view of his intention to manufacture chemicals and sell them wholesale—not retail. Mr. Austin had not passed his examination, but had had considerable experience with a chemist, and understood the business. Mr. White submitted that the section of the Act under which the case was brought did not refer to the words "manufacturing chemist," only to a chemist and druggist pure and simple, and not to a trader in the wholesale line.

His Honour remarked that this was a nice point.

Mr. Austin corroborated this statement, saying he knew perfectly well he was not entitled to sell by retail, and neither had done so nor intended to do so. In cross-examination, he said the neuralgic mixture which he might have sold on June 15 contained chloric ether, but not in such quantity as to prohibit his selling it.

Mr. Grey argued that the words of the section he quoted clearly laid down that the defendant must not assume a title which implied he was a chemist or druggist, and the words on the defendant's shop clearly implied that. The law, as applicable to this case, was discussed at considerable length, the plaintiff's counsel quoting previous decisions which he believed were in his favour. In the course of the hearing, Mr. White was led to remark that all the articles sold by a chemist were poisons, or contained poisons; for instance, tonics contained a certain quantity of poison; he had taken them. His Honour replied: Oh! but that is only in the sense that whisky is called slow poison. (Laughter.) Eventually a verdict was given for the plaintiff Society, and the full penalty of 5*l.* imposed.

Sale of Food and Drugs Act.

Adulterated Borax.

At Birmingham Police Court, on August 5, Henry Brown and Ernest Chapman, both of Scholefield Street, and Alice Bristol, Lupan Street, shopkeepers, were summoned for selling borax which contained in the first two cases 35 per cent., and in the last case 25 per cent., of bicarbonate of soda. The borax was sold in halfpenny packets just as they were supplied by the wholesale house. Mr. Fisher (a magistrate) asked what effect the adulteration would have on the borax; and Mr. Parker (chief of the Public Health Department) replied that borax was largely used for sore throats as well as for preserving-purposes, and the presence of the bicarbonate of soda would minimise the curative properties. He added, in reply to another question, that the values of bicarbonate of soda and of borax were about the same at the present time, but if a person asked for borax he was entitled to get it pure. The packets were supplied to the defendants by Mr. Josiah Austin, of the Excelsior Chemical-works, Nechells. He (Mr. Parker) had a sample taken from the works, but this was found to be genuine borax. Mr. Austin, who was a highly respectable chemist, had written to say that he would discontinue selling this borax, and that he would send out a circular to his customers asking them to return their present consignments, which he would replace with packets of pure borax. Mr. Austin had also promised to pay any fines imposed in the present cases, and, indeed, was prepared to do everything to prevent the public being defrauded. Mr. Fisher said that was what they might expect from a respectable firm like Austin's. In the circumstances they would impose a fine of 5*s.* and costs in each case.

Gregory's Powder.

At Lambeth Police Court, on August 4, Thomas Tijou, chemist and druggist, of Upper Kennington Lane, was summoned at the instance of the Lambeth Vestry for selling some Gregory's powder which the Public Analyst certified to consist of rhubarb and ginger, 33·4; official carbonate of magnesia, 66·6. The analyst added the following note to his certificate:—"This article has been made with official carbonate of magnesia instead of the more expensive light magnesia required by the British Pharmacopœia." Mr Hopkins remarked that it was most important that drugs should be kept pure, and ordered the defendant to pay a penalty of 40*s.* and 12*s.* 6*d.* costs.

Sweet Nitre and Tincture of Rhubarb.

At the Abergele Petty Sessions, on August 6, Superintendent Jones, of the Denbighshire County Police, summoned Mr. Thomas Williams, grocer and baker, Pensarn, Abergele, for selling tincture of rhubarb and sweet spirit of nitre which were not of the quality and nature demanded.

The defendant did not appear, but was represented by Mr. E. A. Crabbe, solicitor, Abergele. The sale of the articles was admitted.

Superintendent Jones produced the certificate of Mr. Lowe, Chester, county analyst, which showed that the tincture of rhubarb contained only about three-quarters of the amount of alcohol ordered by the British Pharmacopœia, and the sweet spirit of nitre had only about one-sixth of the amount of ethyl nitrite required by the B.P.

For the defence, Mr. Crabbe said that the defendant had acted in ignorance. He kept the tincture of rhubarb for the convenience of the residents of Pensarn, which did not possess a chemist's shop. It was bought from Messrs. Bell & Son, Liverpool, and defendant was assured that it complied with the Act of Parliament. He produced the bottle in which the tincture of rhubarb was sent to defendant, and on the label of which were the following words: "Tincture of rhubarb, B.P." The wholesale firm now admitted that it was not up to the British Pharmacopœia strength, and that it was mixed with other ingredients to make it more palatable. Under the circumstances, he was bound to plead guilty with regard to the tincture of rhubarb.

Dr. Wolstenholme (a magistrate) pointed out that the tincture was kept in a bottle with an ordinary cork. It was clear that the defendant had been deceived. Messrs. Bell & Son should certainly make it good to the defendant, who, he was sure, would not knowingly commit an offence.

Superintendent Jones remarked that defendant had his remedy against Messrs. Bell & Co.

Mr. Crabbe replied that unfortunately that was not so, as it had been invoiced to the defendant as "compound tincture of rhubarb." It was not so much the fine that defendant minded as the question of reputation.

The Chairman of the Bench said it was a hard case, and, unfortunately for defendant, the costs were heavy. Defendant could not be said to be responsible, but the analyst's certificate was conclusive. As the costs in the tincture-of-rhubarb case came to 18*s.*, defendant would be fined the nominal sum of 6*d.*

Dr. Wolstenholme said he hoped defendant would go for Messrs. Bell & Son; and Mr. Mason (a magistrate) suggested that defendant should get a glass stopper for the bottle.

Mr. Crabbe: We shall throw the whole lot down the sink.

The case of the sweet spirit of nitre was then taken, and Mr. Crabbe argued that defendant was entitled to a dismissal, as he did not know that the spirit would evaporate. He had kept it in a large bottle, and as a customer asked for it he served it out. Defendant should have sold the spirit in small stoppered bottles as he received it. It was really ignorance of the nature of the spirit that had caused the evaporation.

The Chairman pointed out that there was no charge of adulteration.

Superintendent Jones replied that he did not charge defendant with adulteration. He complained that the sweet spirit of nitre was not of the nature and quality demanded. It was robbing the public.

The Chairman said it was hard on defendant, who was fined 6*d*. and 18*s*. costs.

The Bovril Actions.—Judgment.

Bovril (Limited) v. *Bouillon Fleet (Limited)*; *Same* v. *MacSymons' Stores (Limited)*; *Same* v. *McBirnie*; *Same* v. *Evans*; *Same* v. *Shaw*; *Same* v. *J. P. Evans & Co.*

In the Chancery Division of the High Court, on Wednesday, August 10, Mr. Justice Byrne gave judgment in these actions.

His Lordship said these actions were brought to restrain the first defendant company from passing off, or attempting to pass off, or enabling others to pass off their goods as the goods of the plaintiff company, and for consequential relief. The question as against the first-named defendant which he had to decide was one of fact—viz., had or had not the company done that which was calculated to deceive purchasers from retail dealers into the belief that the goods of the defendant company were the goods of the plaintiff company? Against the other defendants the question was, had they in fact deceived? The dispute arose in this way. One trader put an article upon the market which achieved success, either by means of intrinsic merit, or by advertisement, or both. This article got known to the trade and to the public in connection with the name of the article, the name of the makers, and the general get-up and appearance of the thing as sold. Other traders desired to compete with them in the sale of a similar article, and if it were done in a legitimate way, and fairly, it was advantageous to the public, and did not interfere with any private legal right. Unfortunately, intending competitors did not, in many cases, when putting their goods on the market, consider how they might best distinguish, but how they need least distinguish, their goods from those of the other traders. They were not content with the advantage they derived from the fact that others had aroused a taste or demand on the part of the public for an article of a particular kind, but they desired also an illegitimate share of the reputation acquired by their trade opponents by means of advertisement, or the get-up of their goods. Some of these cases presented a good deal of difficulty, and, he thought, they got more difficult as traders grew more wary, being near the border-line between legitimate and illegitimate. The present case was one of these. Of course, if a man adopted or used one or other of the leading characteristics of his rival's get-up, although he might lawfully do so, he was creating or increasing the difficulty of sufficiently distinguishing his goods, and he naturally invited the question—why was this done? He might be able to explain, or do as was often done, and was done in this case—say, "I had a right to do it, and chose to exercise my right." The defendant's manager was not called, but there were letters showing that the defendants had fully in view the plaintiffs' bottles and get-up before they started their present trade and selected their bottles and get-up—and it was only fair to the defendants to say that, with their intention to devise a bottle and get-up for their new venture, it would be impossible for them to neglect an examination and consideration of the bottles and methods of the get-up of similar articles already on the market; and while he thought it would not be right to encourage the notion that a trader could secure a monopoly of a special shape or design of vessel for containing his goods beyond that which the law gave by means of registration, on the other hand, if a particular form of vessel had become known to the trade and to the public in connection with the trader's goods, a man who chose a vessel for his competing goods identical with or only colourably differing from that of the former, he had a special duty cast upon him of clearly distinguishing. The plaintiffs had for eight or ten years past manufactured and sold fluid beef in distinctive bottles, with distinctive labels and colours. This article, so manufactured and sold, had acquired a great reputation, and the plaintiffs had expended a very large sum in advertising their goods—it was said between 250 000*l*. and 500,000*l*. The manufacture and sale of fluid beef or extract of meat was by no means confined to the plaintiffs. There had been, and were now, a considerable number of fluid meats upon the market. In 1896 the defendants, Bouillon Fleet (Limited), commenced the sale of a fluid extract of meat with the get-up complained of. They had previously sold an extract called Bouillon Fleet, about which no question now arose. The plaintiffs' extract was sold in bottles, [and his Lordship went on to describe the characteristics of the bottles, labels, and the capsules, &c., as well as the colours and words on each]. He thought it would be impossible for anyone who looked at the label or the capsule of the defendants' bottle, being accustomed to buy Bovril, to think that he was getting Bovril, as the label used by the defendants was quite different from that of the plaintiffs, being white with green margin and a red lettering on it. Capsules, neck-bands with directions for use, side labels, embossed letters, and colour of bottle were common to the trade. The chief distinctive parts of the plaintiffs' get-up, so far as the bottles were concerned, were the name, the colour of capsules, shape of bottle, and trade-marks. Speaking of the evidence, his Lordship said he must particularly refer to the evidence of the plaintiffs' witnesses, Mr. Kibble (of Harrod's Stores), Mr. Anthony, Mr. Vale, Mr. Marler, and Mr. Hassall, who thought it would be impossible for anyone who took even a casual glance at the wrappers to think he was buying Bovril when in fact he was buying Keros. He must next deal with the evidence in the cases intended to show deception on the part of retail dealers, because if he thought that the retail dealers had in fact taken advantage of the defendants' get-up for the purpose of deceiving customers that would materially affect his mind in coming to a conclusion as to the probability of deception owing to the get-up itself. No adult customer had given evidence, nor had any adult been engaged in carrying out the test-cases relied on. All the test-orders put in evidence had been for 10*d*. bottles of Bovril or for 10*d*. bottles of new Bovril—that was to say, they had always been given in such a way as might lead shopmen to think that Bovril proper was not or might not be the article required. He did not think that was a fair method of procedure. If traders were suspected of fraud in cases like the present it was sometimes the only way to bring it home to them to send "test" or "trap" orders, but it was right and fair to send such orders in clear and unambiguous terms. Whether or not clear and unambiguous orders had been made he did not know, but he thought he was justified in the conclusion that they had not been used, or that if used they had failed. This *modus operandi* had been followed in the present case. An intelligent solicitor's clerk had been sent to Liverpool, and had spent some weeks or months there sending lads and children into shops, sometimes with verbal orders and sometimes with a written order purporting to be from their mothers, and with money to pay for the goods ordered. How many experiments were tried he did not know, but it was clear that there were a considerable number, and it was proved that the experiments did not always come off successful. It would have been interesting to know the proportion of failures to successes. He was struck with the evidence of Mr. Crellan, called by the plaintiffs, to the effect that the public had associated fluid beef with the word "Bovril" generally, and when persons asked for Bovril they would expect to get Bovril, and he suspected the truth to be that the plaintiffs, by advertising, had got the word "Bovril" known till it had become with some people a sort of equivalent for fluid beef or extract of meat-juices; he thought "Liebig" was known as a name for extract of meat. He believed that Mr. O'Brien and his coadjutors had done more to create a title of New Bovril than any tradesman had done. Without dwelling on the details of the evidence, he was satisfied that in every instance adduced before him there was at least a probability that the shopman or person serving the goods thought that in using the word "Bovril" the person applying was asking for extract of meat, and that the words used only showed what fluid extract was meant. He refrained from commenting at length upon many things which invited observation: the little lads with their lessons learned who had in some instances committed to memory with more or less success what they had said on affidavit; the children taught to lie and say their mothers had sent them when they had not; the little girl who had the lie on her conscience made him (Mr. Justice Byrne) feel great regret that it should have been considered necessary to the plaintiff's case to employ such means of obtaining evidence. Counsel for the defence could not, and did not, cross-examine as they would in the case of adults. It was legitimate in his (Mr. Justice Byrne's) opinion to use in some instances such means as were adduced in this case to suggest, but not to establish, a case of fraud. The value of evidence founded solely upon the testimony of children of tender years required very careful weighing. In the present case the defendants had gone dangerously near, but he thought they had kept on the right side of the line. The result was that the actions failed, and must be dismissed with costs.

A Chemist's Partnership.

At the Croydon County Court, on Tuesday, before Judge Vernon Lushington, John Hutchinson Wood, chemist, of 72 Handcroft Road, Croydon, sued William Loftie V. Denton, manager of the Fox and Hounds Hotel, London Road, Croydon, for 45*l.* 3*s.* 4*d.*, for board and lodging and money lent. The defence was that the transactions between the parties were partnership transactions.

Plaintiff's counsel said that the defendant, becoming dissatisfied with his then employment, arranged with the plaintiff that the plaintiff should teach him the business of a chemist, and that he should pay plaintiff 100*l.* Plaintiff was then to buy a chemist's business, for which he was negotiating, and it was to be carried on in partnership. The 100*l.* was not found in cash. A bill was drawn by the defendant and another gentleman, and when it became due the plaintiff paid it; so that the 100*l.* was not advanced by the defendant at all. Afterwards the defendant got married, and went with his wife to lodge with plaintiff at 25*s.* a week.

The plaintiff was called in support of this statement, and said that there was a talk of partnership, but that he never had a penny of the 100*l.* the defendant was to find on account of the partnership.

His Honour, however, held that there was a partnership, and defendant's counsel said, as a matter of fact, the defendant was sworn in as postmaster of the post-office which was attached to the chemist's shop, and carried out the duties.

Defendant's counsel said his defence was that the moneys now claimed were advanced by one partner to another out of the proceeds of the business. There was also a counterclaim.

Plaintiff's counsel said he could show that the moneys were entirely outside the partnership which his Honour had held to exist.

His Honour said it was very unfortunate that the suggestion was made that there was no partnership, because there obviously was one. The plaintiff was in rather an unfavourable position for getting a judgment from him.

In the end, his Honour entered judgment for the defendant on the claim, with costs. The counterclaim was struck out, without costs.

The Factory Act.

Chemical-manufacturers Fined.

At the Wakefield Police Court, on August 5, the Whitwood Chemical Company, Normanton, were charged with breaches of the Factory and Workshops Act. The Government Inspector of Factories, who prosecuted, said that the firm were first summoned for employing a boy named Thomas Sargent, under 16 years of age, without having obtained a certificate of fitness from the duly-appointed surgeon of the district. On June 15 Sargent, who was employed in the benzole-house at the Whitwood Chemical-works, was engaged in skimming some liquid in a tub, and shortly afterwards he was found dead. On July 20 he visited the works, and found that, although the lad had been employed in the benzole-house eight weeks, the firm had not obtained a certificate as to his fitness. The defendant firm were also charged with neglecting to comply with some special rules made for chemical-works by failing to fence two caustic-soda vessels. In the first case the defendants were fined 5*l.* 16*s.*, and in the second 1*l.* 18*s.* 6*d.*

The Peerless Erasmic Herb-soap.

In the Chancery Division on Tuesday, before Mr. Justice Stirling, Mr. Jenkins, Q.C., mentioned the case of Crosfield *v.* Sharp Brothers, which was before his Lordship the previous week on a motion for an injunction to restrain Messrs. Sharp Brothers, soap-manufacturers and perfumers, of Red Lion Square, from passing off or assisting others to pass off a toilet-soap in imitation of that manufactured by the plaintiffs, Messrs. J. Crosfield & Sons (Limited), of Warrington. The case had stood over to enable the defendants to design and submit a wrapper of a different colour and design to that used by the plaintiffs. Mr. Jenkins said the defendants had now managed to set out a design which, he thought, would meet the view of the Court. The violets on the wrapper which were complained of had been removed. It seemed useless to try and satisfy the plaintiffs, and all he was anxious to do was get the approval of the Court to the new design.

Mr. Upjohn, Q.C., for the plaintiffs, said that so far as the wrapper was concerned his clients were willing to abide by his Lordship's decision, but he thought the defendants ought to alter the shape of the tablet itself.

Mr. Jenkins said he had agreed that the colour of the soap should be white, and at the expiration of a fortnight they would use the new wrappers.

Mr. Upjohn considered that the defendants should get in any of the soap which was now out in the objectionable wrappers.

Mr. Jenkins could not undertake to do that.

Mr. Justice Stirling thought it was reasonable that the defendants should keep an account of all soap sold which was in the old wrappers. Then at the expiration of a fortnight the soap would be sent out in the new wrappers pending trial or further order.

Mr. Jenkins: That will be without prejudice to any question?

Mr. Justice Stirling: Yes.

Mr. Jenkins: Of course the plaintiffs will give an undertaking as to damages, because we have been put to a certain amount of inconvenience by these proceedings.

Mr. Justice Stirling: Very well.

Insecticide Trade-marks.

Mr. Justice Kekewich had before him in the Chancery Division, on Friday last, the matter of Watkins *v.* Rowland Ward. Mr. Walter said he had a motion on behalf of the plaintiff Watkins to strike Rowland Ward's trade-mark for insecticides off the register, and his learned friend, Mr. Terrell, Q.C., had a cross-motion on behalf of Rowland Ward to restrain infringement of his trade-mark. It was a matter of moth-powders. As his client was abroad, and as, probably, there was no large sale of moth-powders during the Long Vacation, Mr. Walter suggested that the matter might stand over, on an undertaking being given on his part to send out no more of these labels, and to withdraw goods so labelled which had been sent out to their agents. Mr. Terrell said the device of the moth on Watkins's label was particularly objected to. On this undertaking the motion stood over the Long Vacation.

The Rival "Blues."

At Liverpool, before Mr. Justice Bruce, the action of William Edge & Sons (Limited) *v.* William Gallon & Sons, which occupied the attention of the Court at Manchester for two days last week, and was adjourned for argument, was proceeded with on August 8. It was an action brought by the plaintiffs to obtain an injunction to restrain the defendants from selling any laundry blue not being of the plaintiffs' manufacture under the name of "Dolly" blue.

After long arguments on both sides had been heard and a large number of witnesses called, his Lordship delivered a lengthy judgment in favour of the plaintiffs, granting an injunction as asked for, with costs, and directed an inquiry as to damages if the parties could not agree as to the amount of same.

Bankruptcies and Failures.

Re Gilbert Thonger, late of the Medical Hall, Hagley Road, now residing at Harborne, Chemist.

The examination of this debtor was fixed to take place before Mr. Registrar Glaisyer, at the Birmingham Bankruptcy Court, on August 3. The debtor appeared, accompanied by his son, Mr. C. T. Thonger, but Mr. Sharp (Official Receiver) reported that he was satisfied that the bankrupt was not competent by reason of his age to undergo an examination, and he therefore applied that the public examination be adjourned *sine die*, and the Registrar adjourned the examination accordingly. The statement of affairs showed liabilities 543*l.*, assets 129*l.* The Official Receiver, in his observations, said debtor had been a chemist since 1852. He commenced business in Broad Street, Birmingham, without capital, but his brother lent him 300*l.*, which was subsequently repaid. In 1870 he sold his business, and became a partner in a wholesale business in Liverpool. He introduced capital amounting to 1,000*l.*, which was lost in a few weeks' time, and the firm suspended payment. The debtor then removed to Harborne, and traded as a chemist for many years. In 1892 a partner joined him, and introduced 500*l.* capital, but two years later the partnership was dissolved, and the debtor retired, receiving 500*l.* He afterwards removed to Upper Hagley Road, where he traded until April last, when the Sheriff levied, and the fixtures and fittings were sold by auction, his son, Mr. C. T. Thonger, being the purchaser. The stock, valued at 22*l.*, was not sold. The debtor's life was insured, but a year ago he sold the policy for 100*l.* He attributed his insolvency to indisposition and to circumstances rendering it impossible to get proper assistance in his old age. He states that he was not aware of his insolvency until the sale. The following are among the creditors :—

	£	*s.*	*d.*
Allen & Hanburys, London	0	11	5
Anglo-American Food Company, Liverpool	1	4	0
Ayrton & Saunders, Liverpool	22	7	1
Barnett & Co., Birmingham	3	6	1
Blackwell, Hayes & Co., Birmingham ...	4	5	8
Bovril (Limited), Birmingham	2	11	7
Camwal, Aston	7	9	0
Edwards, W., & Son, London	0	4	11
Gibbs, W., London	7	19	2
Gilbertson & Son, London	3	6	0
Kemp & Son, Horncastle	4	9	6
Kaputine Company, Huddersfield ...	1	11	6
Letchford & Co., London	1	18	0
Midland Apothecaries' Company, Birmingham	11	1	2
Southall Brothers & Barclay, Birmingham	56	1	4
Tomlinson, R., & Son, Birmingham ...	9	9	10½
Toogood, W., London	3	10	4
Vaughan, Harborne	4	17	6
Vimbos, Birmingham	1	12	9
Vinolia Company, London	2	14	8
Wyleys (Limited), Birmingham	17	13	7

Re Lees & Co. (Wm. Hy. Lees trading as), 18 and 20 St. Petersgate, Stockport, Drysalters.

The accounts in this failure show gross liabilities 949*l.* 12*s.*, and a deficiency of 604*l.* 3*s.* 6*d.* At his examination at the Stockport Bankruptcy Court, on August 5, the debtor stated that, in reference to the floating of the company, "Lees, Wallace & Co." (which business he had purchased for 70*l.*), he was put down in the prospectus as a director, whilst at the time he had only taken out one share for 1*l.* He had no idea how the auditors made out the profits which were likely to result. The company failed in twelve months, and he would be inclined to put down the failure to bad management.

The Official Receiver said the charge made by the creditors was that, although the debtor had purchased such a large amount of stock, he had sold it off quickly, and had only 60*l.* worth when the bankruptcy proceedings were commenced, whilst his liabilities had been very large.

The examination was closed, on condition that the debtor gave to the Official Receiver some particulars with respect to law-expenses and other items.

Re William Donald Clark, Stocks Hill Drug-store, Holbeck, Chemist.

The first meeting of the creditors was held on August 4. The liabilities were estimated at 611*l.* 4*s.* and the assets at 166*l.* 8*s.* The failure was said to be due to "bad trade, want of capital, and lack of experience in the beer-trade." The debtor, who is 23 years of age, had, it appeared, acted as dispenser to a medical man in Castleford. He started the present business a year ago with borrowed money and a full off-licence, but failed to make it pay from the first, though he practically gave beer away for the first six months in the hope of inducing custom. No resolutions were passed.

Deeds of Arrangement.

Davidson, John, trading as "Laygate Cycle-works," 97 Laygate Lane, South Shields, cycle manufacturer and repairer; also trading at 154 South Eldon Street, South Shields, herbalist and drug-store dealer. Trustee, W. Arthur Smith, King Street, South Shields, chartered accountant. Dated, July 28; filed, August 3. Secured creditors, 450*l.*; liabilities unsecured, 225*l.* 0*s.* 9*d.*; estimated net assets, 104*l.* The following are scheduled as creditors :—

	£	*s.*	*d.*
Field, A., & Co., Birmingham	160	0	0
High-level Brand Company, Newcastle	15	0	0
Newcastle Machinists' Company, Newcastle	10	0	0

Garwood, George James, Earlham Road, Norwich, 14 Hill House Road, Thorpe, Norwich, dispensing chemist. Trustee, Frederick G. Emms, 3 Prince of Wales Road, Norwich, solicitor. Dated, July 30; filed, August 5. Liabilities unsecured, 1,279*l.* 16*s.* 2*d.*; estimated net assets, 173*l.* The following are scheduled as creditors :—

	£	*s.*	*d.*
Barron, Harveys & Co., London	34	0	0
Burton, E., Norwich	41	0	0
Bussey, —, Norwich	35	0	0
Chamberlin, Sons & Co., Norwich	20	0	0
Coaks, J. B., Norwich	70	0	0
Emms, F. G., Norwich	96	0	0
Fell, —, Norwich	10	0	0
Garwood, A. W., Norwich	165	0	0
Garwood, Mrs. F. W., Norwich	179	0	0
Harden, C., Norwich	20	0	0
Holloways, London	10	0	0
Holmes, A. G., Norwich	30	0	0
Hunting, D. G., Great Yarmouth	370	0	0
Jarrold & Sons, Norwich	10	0	0
Maw, Son & Thompson, London	30	0	0
Meggeson & Co., London	23	0	0
Norwich Sanitary Authority (rates)	19	0	0
Reeve, W. A., Norwich	35	0	0
Willis, J., Norwich	51	0	0

Pearson, John Hudspeth, Narrow Street, Peterborough, chemist and druggist. Trustee, John R. Smart, Peterborough, chartered accountant. Dated, July 30; filed, August 5. Secured creditors, 80*l.*; liabilities unsecured, 1,774*l.* 9*s.* 8*d.*; estimated net assets, 410*l.* The following are scheduled as creditors :—

	£	*s.*	*d.*
Allison, E. & H. (Limited), Hull	26	0	0
Atkins, Mrs., Lowestoft	101	0	0
Batten & Whitsed, Peterborough	32	0	0
Beirnstein, —, London	13	0	0
Burgoyne, Burbidges & Co., London	12	0	0
Churchman, —, Ipswich	17	0	0
Clifton, J., Peterborough	10	0	0
Colman, S. C., Peterborough	29	0	0
Evans, Lescher & Webb, London	25	0	0
Fletcher Brothers & Co., Grimsby	17	0	0
Foote, C., Peterborough	33	0	0
Herbert, J. A., Peterborough	11	0	0
Hodgkinson & Co., London	10	0	0
Mills, R. M., & Co., Bourne	40	0	0
Perkins, T., Hitchin	24	0	0

	£	s.	d.
Peterborough Corporation (rates)	10	0	0
Photo Filigrane Company, Liverpool	17	0	0
Pillivant, F. T., London	14	0	0
Pinchin, Johnson & Co., London	11	0	0
Sutton, W., & Co., London	245	0	0
Thompson, J. (executors of), Peterborough	160	0	0
Wyleys (Limited), Coventry	19	0	0
Yardley & Co. (Limited), London	11	0	0
Bankers' claims	562	0	0

Gazette.

PARTNERSHIPS DISSOLVED.

Burton, J., and **Richardson, W. J.,** under the style of Burton & Richardson, Amble, Northumberland, aërated-water manufacturers.

Girling, J., and **Waite, J. T.,** under the style of Doctors Girling & Waite, York, physicians and surgeons.

Laithwaite, A., Laithwaite, J. L., and **Kay, A.,** under the style of Laithwaite & Kay, Bromley Cross, near Bolton, manufacturers of starch and blue; so far as regards A. Kay.

Turner, A. M. S., and **Watson, S. G.,** under the style of Sydney Turner & Watson, Hove, surgeons.

Walker, E., and **Harrison, W. P.,** under the style of Walker & Harrison, The Phœnix Biscuit-works, Ratcliff Cross, E., manufacturers of biscuits and foods for animals.

THE BANKRUPTCY ACTS, 1883 AND 1890.

Order made on Application for Discharge.

Davies, Charles Edward (carrying on business as P. H. Schroder & Co., formerly as C. E. Davies & Co., afterwards and now as Parker, Davies & Co.), Gravesend, Mincing Lane, E.C., and Grays, general merchant, disinfectant-manufacturer, and oil-refiner — discharge refused.

Personalities.

Mr. J. E. Bush, chemist, Melksham, has had his collar-bone fractured by being thrown from his bicycle.

Dr. J. C. Thresh, medical officer of health for the Essex County Council, has been appointed lecturer on public health to the London Hospital Medical College.

Mr. F. A. Upsher Smith has been appointed demonstrator in pharmacy and materia medica in the Pharmaceutical Society's school for the ensuing session.

Mr. J. H. Pearson, chemist and druggist, Narrow Street, Peterborough, has resigned his seat on the Peterborough Town Council, of which body he has been a member some years.

On August 4 Mr. John Taylor, on behalf of the employés of Mr. James Taylor, wholesale druggist, 132 Trongate, Glasgow, presented the manager, Mr. Frew with a marble timepiece on theoccasion of his marriage.

The gross value of the personal estate of the late Mr. Charles George Kurtz, manufacturing chemist, Liverpool, has been sworn at 69,529*l.* 14*s.* 7*d.*, the net value being 60,348*l.* 13*s.* 3*d.* The executors—Mr. George Layton, of Liverpool, Mr. D. C. Lloyd-Owen, of Birmingham, and Mrs. Kurtz—were bequeathed 500*l.* each.

Mr. John Henry Rhodes, who served an apprenticeship with Messrs. Severs & Bateson, pharmaceutical chemists, Kendal, has got his M.B.C.M. degree at Edinburgh University, passing his examination with first-class honours. Mr. Rhodes, in addition to his degree, was awarded the Beaney prize for anatomy and surgery, and the Buchanan scholarship

A deputation from the Manchester City Council has interviewed Alderman Gibson, the Lord Mayor, and presented the unanimous request of the Council that he should accept the nomination to the Lord Mayoralty for the ensuing year. After hearing the deputation, the Lord Mayor stated that, while he felt very much honoured by the request he was unable to comply with the desire.

Business Changes.

Notices of changes in the retail trade, and opening of new businesses, are inserted in this section free of charge, if properly authenticated.

Mr. B. Wyles has opened a pharmacy at 12 Liverpool Road, Birkdale.

Mr. Hugo Lorenz, 7 and 8 Idol Lane, E.C., has been appointed agent in the United Kingdom for Mr. F. Hoffmann (La Roche & Cie), of Basel and Grenzach.

The partnership between Messrs. Oakes & Gardiner, chemists, Ely, has been dissolved. The business in future will be carried on by Mr. J. A. Gardiner alone.

In consequence of their premises at 85 High Road, Lewisham, being required by the London and Midland Bank, Messrs. Clift & Crow, chemists and druggists, have removed to adjacent premises at 2 Lewis Grove.

Trade-Marks Applied for.

Anyone who objects to the registration of a trade-mark must address the Comptroller-General, Patent Office, Chancery Lane, W.C., within a month of the date of publication.

(*From the "Trade Marks Journal," August* 3, 1898.)

"Volenite"; for chemical substances used in manufactures, photography, or philosophical research in Class 1; for mineral and aërated waters in Class 44. By Volenite (Limited), 16 St. Helen's Place, London, E.C., manufacturers. 215,094.

"Eucryl"; for chemical substances used for agricultural, horticultural, veterinary, and sanitary purposes. By Major & Co. (Limited), 447 Wincolmlee, Hull, chemical-manufacturers. 214,088.

"Poletas"; for a disinfectant. By H. W. Dunlop, trading as the Polenta Manufacturing Company, 95 Oxford Road, Reading, coal and forage merchant. 214,788.

"Vaxol"; for a medicinal preparation for human use. By J. M. Creed, "Ravenscraig," Wallis Street, Woollahra, near Sydney, N.S.W., and W. J. Green, "Werundah," Young Street, Croydon, near Sydney. 214,398.

"Alok"; for chemical substances prepared for use in medicine and pharmacy. By W. M. Stevenson, trading as Fisher & Co., 337 George Street, Sydney, N.S.W., chemist. 214,910.

Figure of copying-press; for chemical substances prepared for use in medicine and pharmacy. By J. R. Summers, 15 Norton Folgate, E., pharmaceutical chemist. 215,523.

"Touchstone"; for a cream-of-tartar substitute used as an ingredient in the preparation of food. By Burton, Baker & Co., 110–112 Southwark Street, London, S.E. 212,710.

"Town Crier"; for perfumery, including toilet-articles, preparations for the teeth and hair, and perfumed soap. By the United Alkali Company (Limited), G11 Exchange Buildings, Liverpool. 215,430.

"Viking" and device of ship; for feeding-bottles. By Johnsen & Jörgensen, 4, 5, and 6 Bury Court, St. Mary Axe, E.C. 214,844. Essential particulars, the device and the word "Viking."

Device, representing a coat of mail, and wording; for a preparation for polishing wax-cloth. By J. R. Wood, 51 Montgomery Street, Kelvinside, Glasgow, analytical chemist. 214,967. Essential particular, the device.

New Capsules.—Messrs. T. & H. Smith & Co., Edinburgh, and 12 Worship Street, London, have sent us samples of some new capsules they are preparing. The capsules contain dried spleen, dried thyroid gland, and bichromate of potash. The bichromate of potash capsules containing $\frac{1}{10}$-gr. doses, we are told, have been used with marked success in cases of ulcerated stomach and chronic dyspepsia. We also notice some Blaud's-pill capsules, which are prepared by a new process designed to prevent oxidation as much as possible. The capsules are all well made and neatly finished off.

New Companies & Company News.

GEORGE ARMSTRONG & CO. (LIMITED).—Capital 20,000*l.*, in 10*l.* shares. Objects: To acquire and carry on the business of seed-crushers, refiners, millowners, and manufacturers, carried on as "George Armstrong & Co.," at the Cumberland Mills, Isle of Dogs, London. The first managers are Edgar Hyde and Frederick M. Williams.

WARDLE'S SYNDICATE (LIMITED).—Capital 2,000*l.*, in 1*l.* shares. Objects: To acquire the business of manufacturers of blue carried on by Wardle & Nuttall, at Seed Street, Radcliffe, Manchester, and to manufacture, sell, and deal in chemicals, drugs, colours, dye-stuffs, and pharmaceutical preparations. Registered without articles of association. Registered office, 1 Garden Street, Hulme, Manchester.

PALMER & CO. (LIMITED).—Capital 56,250*l.*, in 1*l.* shares (45,000 6*l.*-per-cent. cumulative preference). Objects: To acquire the business of Palmer & Co. (Limited), which was registered in 1891, to enter into an agreement with the said old company and George B. Game and John J. Scott, its liquidators, and to manufacture, sell, and deal in candles, soap, wax, tallow, oil, glycerin, paraffin, seeds, chemicals, &c. The first directors are Sir James T. Ritchie, Sir Forrest Fulton, Q.C., George B. Game, Henry Palmer, and Dampier Palmer. Qualification, 250*l.* Remuneration, 200*l.* each per annum, and 400*l.* for the chairman.

W. O. SMITH COMPANY (LIMITED).—Capital 15,000*l.*, in 1*l.* shares (7,500 5*l.*-per-cent. cumulative preference). Objects: To acquire, take over, and carry on the business of a chemist, druggist, and mineral-water manufacturer now carried on by William O. Smith, at Fareham and Titchfield, Hants, and the business of a mineral-water manufacturer carried on by Alfred Chignell, at 16 West Street, Havant, Hants, as "The South Hants Mineral-water Company." The first subscribers (each with one share) are:—Montagu H. Foster, tutor, Miss Mabel A. Foster, Montagu R. W. Foster, and Mrs. Mary H. F. Foster, all of Stubbington House, Fareham; Wm. O. Smith, Modern Pharmacy, Fareham, chemist; Miss Helen C. J. Elgie, North Park, Exeter; Ernest Edmonds, 70 Commercial Road, Portsmouth, C.A. The first directors are Montagu H. Foster and William O. Smith (managing director). Qualification, 250*l.* Remuneration, 20 guineas each per annum.

BELL, SONS & CO. (LIMITED).—Capital 70,000*l.*, in 1*l.* shares (35,000 5½-per-cent. cumulative preference). Objects: To adopt an agreement with James A. Bell, James A. Bell, jun., Edward Bell, and John R. Bell. and to carry on the business of chemists, druggists, drysalters, oil and colour men, and makers of and dealers in proprietary articles and pharmaceutical preparations. The first subscribers (each with one share) are:—Edward Bell, 35 Slatey Road, Birkenhead, wholesale druggist; John R. Bell and James A. Bell, Columbia House, Shrewsbury Road, Oxton, wholesale druggists; Wm. D. Etherington, Oakdene, Knowsley Road, Ormskirk, clerk; Joseph H. Parkinson, 33 Adelaide Road, Kensington, Liverpool, clerk; Harold Williams, 123 Bedford Street, Liverpool, clerk; James A. Bell, jun., Havenside, Hoylake, wholesale druggist. The first directors are James A. Bell, jun., Edward Bell, John R. Bell, and William D. Etherington. Qualification, 250*l.* Remuneration, as the company may decide.

THE directors of Jeyes' Sanitary Compounds Company (Limited) on August 3 declared an interim dividend at the rate of 5 per cent. for the half-year ending June 30.

BOWMAN, THOMPSON & CO. (LIMITED).—The directors of Bowman, Thompson & Co. (Limited) have decided to pay interim dividends for the six months ended June 30 at the rate of 7 per cent. per annum on the preference shares and 7½ per cent. per annum on the ordinary shares.

LEVINSTEIN (LIMITED).—At the annual meeting of shareholders of this company last week a dividend on the ordinary shares at the rate of 6 per cent. per annum for the half-year ended May 31 last was adopted, making, with the interim dividend paid in December last, 8 per cent. per annum.

SUB-POSTMASTERS MUTUAL GUARANTEE COMPANY (LIMITED).—Among the directors of this company are three chemists—namely, Messrs. J. W. Cussons, Ossett, R. H. Bell, Sunderland, and W. K. Inglis, Delph, Oldham. The company proposes to undertake the guaranteeing of the honesty of sub-postmasters and sub-postmistresses as required by the Post Office, and it is believed that this can be done on lower terms than the guarantee companies now do it and with a good profit to the shareholders. A rate of 3*s.* to 4*s.* per 100*l.* is suggested. Mr. Inglis, of Delph, is acting as secretary to the company.

TAYLOR'S DRUG COMPANY (LIMITED), of Leeds, has "grown so rapidly" that the directors proposed at the end of last June to issue 30,000 new 1*l.* 6-per-cent. cumulative preference shares at a premium of 2*s.* each. Apparently the recipients of the prospectus through the post have not been seizing the opportunity with all the alacrity which the directors had expected, so that the shares are still on offer. The business, it is said, was established in 1876; but as so few particulars are given, and as the profits of only the last three years are mentioned, we think that, if these preferences are not good enough for Leeds investors, they should certainly be avoided down South.—*Daily Mail.*

ANGLO-SICILIAN SULPHUR COMPANY (LIMITED).—An extraordinary general meeting of this company was held on August 2, at Winchester House, Old Broad Street, E.C., Mr. W. T. Brand (chairman of the company) presiding. In reply to shareholders, the chairman said the company had the right to renew the Sicilian contracts for five years—making ten in all—on the same terms. With regard to the English contracts there was no such power, but in the present condition of the company he thought those who made them would be only too pleased to renew them. With regard to the general position of the company, their financial year only ended on July 31, but he might tell them that they had had a very satisfactory year. The production of sulphur had increased considerably, but so, he was glad to say, had the consumption, and the past year had been a very successful one. He then formally proposed a resolution embodying alterations in the articles of association, which was adopted. The annual meeting will be held about the end of September or the beginning of October.

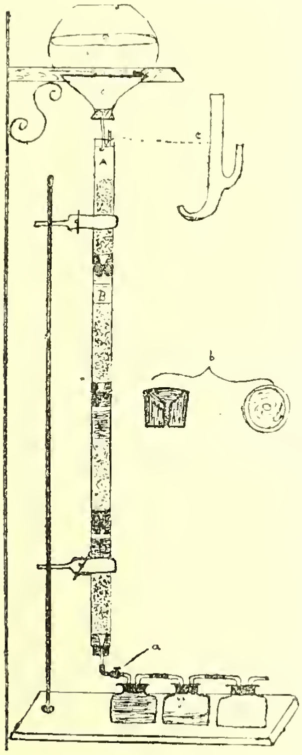
BELL, SONS & CO. (LIMITED).—The *Financial News*, commenting on the prospectus of this Liverpool company of "wholesale and export druggists and manufacturers of various specialities widely known in the trade," which has lately been announced, remarks that as Mr. J. A. Bell started the business in 1847 he must now have reached an age at which he is fully entitled to rest from his labours. But, the *F. N.* adds, "we are surprised that after a successful business career of over fifty years Mr. Bell does not realise how thoroughly unsatisfactory is the prospectus on the faith of which his firm is asking 28,136*l.* for the business. All we are told by Messrs. Dyson, Wright & Co. is that the average profits per annum from January 1, 1895, to April 30, 1898, are sufficient to pay the dividend of 5½ per cent. on the issue of 25,000*l.* preference shares, and to leave a substantial balance for dividend on the ordinary shares. Would Mr. Bell invest any money himself on such a bald statement? Would he not like some idea of the balance remaining after meeting the preference interest, and would he not want to know whether the profits of a business that had been in existence for fifty years were increasing or falling off before he invested his own money? To pay 5½ per cent. on 25,000*l.* requires but 1,375*l.*, and 5 per cent. on 15,000*l.* of ordinary shares—which would be a substantial dividend in the accountants' view—would need but 750*l.*, making together 2,125*l.* Even assuming such a favourable showing from the obscure statement of the accountants, does any sane person think that a patent-medicine business making 2,125*l.* a year is worth nearly fourteen years' purchase?"

THE exports of drugs and chemicals to the Russian Empire from all countries in 1897 amounted to 1,352,108*l.*, against 1,483,083*l.* in 1896. Great Britain's share of this trade was valued at 353,925*l.* in 1897, and 379,491*l.* in 1896. The falling-off is said to be due to the development of native production.

Automatic Repercolation.

By John P. Catford.

COMPARATIVELY few retail pharmacists will prepare their own liquid extract of belladonna by the Pharmacopœia process, with its battery of four percolators, each one with its series of receptacles for collecting the percolate in small portions. Most busy retailers will prefer to buy it ready made (and standardised) from the wholesale manufacturers, whose preparations may be relied upon as to percentage of alkaloids, though perhaps not always prepared strictly by B.P. directions, without heat; some of it, possibly, by exhausting the root by simple percolation, and distilling the spirit from the bulk of the percolate. With a view to simplify the working, with less personal attention, and at the same time to obtain a larger proportion of product, the following experiment was tried at the Liverpool School of Pharmacy with satisfactory results:—A large glass tube, 2½ feet by 1¼ inch diameter, cut by a diamond into four equal lengths, furnished four cylindrical percolators, capable of being connected end to end by perforated rubber bungs or corks steeped in paraffin wax after perforation, which should be funnel-shaped, the widest orifice at the widest end of the cork (fig. *b*). Each cylinder was capable of containing one-tenth of the B.P. metric quantity of moistened root—*i.e.*, 32 grammes—and a second portion of menstruum (24 c.c.) on top. A bit of tubing inserted in the perforated bung, with a feeding-bottle "regulator," served to control the rate of percolation, and to connect with the receptacles for the successive portions of percolate. For these were used ℥j. W.M. bottles, adjusted to contain exactly 24 c.c., when full up to the cork by dropping in pieces of glass stoppers, &c. Two or three of these bottles were connected in series like Woulff bottles; but the tubes not entering below the corks, so that when a bottle was full, the following and less dense percolate passed over to the next and so on (fig. *a*). Calling the percolators A, B, C, and D, the following is an attempt to represent the order of procedure:—



Portions	12				5			8
Menstruum, c.c.	96	48	48	96	48	48	24	192
	A	A B	A B C	A B C D	B C D A	C D A B	D A B C	A B C D
Percolate reserved "portions"	...	...	...	3	...	...	...	4
Percolate reserved c.c.'s ...	...	...	...	72 c.c.	...	...	...	96

Total 168 c.c. + 144 c.c. "last" percolate.

One-fifth of the B.P. quantity of powdered root, or 256 grammes, was weighed into eight quantities of 32 grammes each, one of which, moistened with 24 c.c. of menstruum in a covered pot, was after six hours packed in A (with a little tow at bottom). The percolator was then filled up with menstruum, and kept so by one of the well-known contrivances (fig. *c*) used for the continuous washing of precipitates. The inverted flask contains the menstruum, of which at least 600 c.c. will be required. When macerated sufficiently, percolation is started by adjusting the "regulator"; the first 24 c.c. of percolate moistens the second 32 grammes of powder, which is packed in B, the second portion of percolate poured on, and B is slipped on to the projecting bung at bottom of A, the regulator being transferred to B; and so on with C and D.

When all four were connected as in the diagram, and the first three portions of percolate reserved, the supply of menstruum was stopped to allow A to drain, as it was now practically exhausted. Further treatment with menstruum only yielding 0·4 per cent. solid extract. The exhausted marc was then emptied into a covered jar, and A recharged with a fifth 32 grammes of root, moistened with the fourth "portion" of percolate from D, to which it was attached after receiving the fifth portion of percolate, and so on with B, C, and D, which successively come to the top of the column, and after receiving a final portion or two of menstruum, drained, recharged, and attached to the bottom of the column.

When all four are recharged, A again being the top one, the bottle of menstruum is placed in position, the next four portions of percolate are reserved, and percolation continued to exhaustion, this last percolate being received in one (Oss.) bottle.

The total marc retains nearly 300 c.c. of liquid, as much of which as possible is expressed, filtered, mixed with the "last" percolate, and the spirit distilled, a portion of which recovered spirit serves to adjust the liquid extract when standardised. The aqueous residue, after estimation of alkaloid, might be used for the ointment or plaster, or converted into solid alcoholic extract.

By this method, with the exception of a short interval during the recharging of B, C, and D, the supply of menstruum, the passing from one percolator to another, and the fractionating of the percolates are fairly entitled to be called automatic. By reserving a larger proportion of percolate there is less waste, as by the B.P. method from the same quantity of root only 100 c.c. would have been reserved, requiring about 40 c.c. of the alcoholic menstruum to bring to proper strength—*i.e.*, nearly 50 per cent. of menstruum that has done no work in extracting the drug.

The 168 c.c. required making up to 180 c.c. to contain 0·75 per cent. of alkaloids. The sample of root operated on was by no means a choice one; if of good quality an eighth "portion" might be reserved of percolate. All the eight charges were finished in eight days, and of course it may be continued indefinitely, so that even this miniature and inexpensive apparatus, occupying comparatively little space, would prepare all the liquid extract required by any retail establishment.

Sparkling Lime-wine.—In the Court of Appeal on August 11, before the Master of the Rolls and Lords Justices Chitty and Collins, the case of Packham & Co. *v.* Sturgess & Co. was heard on appeal by the plaintiffs from an order of Mr. Justice North, who declined to grant an injunction restraining the defendants from selling or offering for sale sparkling lime-water in imitation of that sold by the plaintiffs. Plaintiffs carry on business at Croydon, and some years ago they put upon the market "Sparkling Lime-wine," which was then new. They alleged that the defendants, who were mineral-water manufacturers, of Derby, brought out a similar preparation, the get-up of which was so like that of the plaintiffs as to be calculated to deceive. For the defence it was contended that the plaintiffs had no exclusive right to the use of the words "Sparkling Lime-wine," and, further, that the get-up of the two preparations was sufficiently dissimilar to enable it to be easily distinguished. Mr. Justice North in the Court below held that no case had been made out for an injunction, and their Lordships now affirmed that decision and dismissed the appeal, with costs.

Medical Gleanings.

FOR LUMBAGO.

Ammon. chlorid.	gr. x.
Tr. cimicifugæ	♏xv.
Succ conii	ʒj.
Aq. menth. pip. ad	℥j.

T.d.s.

Also apply an icebag to the affected part at bedtime.—*B. M. J.*

CAMPHOR HABIT.

THERE are said to be many young women of the well-to-do classes in London who are addicted to the camphor habit. The notion is that camphor gives a peculiarly clear creaminess of the complexion. Camphor-eating becomes a habit after awhile. The victims have a dreamy, listless air and longing for sleep, with extreme weakness. The complexion assumes a ghastly pallor by no means attractive.

SALICYLIC ACID IN RHEUMATISM.

DR. S. STERLING employs the following ointment for the treatment of rheumatic affections:—

Salicylic acid...	½ oz.
Oil of turpentine	½ oz.
Lanolin	½ oz.
Lard	2 oz.

This is used in the manner mentioned in *C. & D.*, January 29, 1898, page 179.

VALERIAN-TEA FOR INSOMNIA.

AN old and once much-believed-in domestic medicine, valerian, is once more being brought into prominence. According to Dr. G. Schmidt (*Deut. Arztl. Prax.*, 1898), it is of great service in the treatment of sleeplessness arising from nervousness, and especially among women. It is best given in the form of an infusion—a tablespoonful of crushed valerian-root to 8 oz. of hot water; and one or two cupfuls of this is taken, with or without sugar, an hour before going to bed. The effect is enhanced by the addition of a little potassium bromide.

TREATMENT OF BROMIDROSIS.

BROMIDROSIS is the name given to the bacterial changes which causes fetid perspiration. Dr. Waldo, in charge of the department for skin-diseases at the Bristol Royal Infirmary, suggests the internal administration of ichthyol. Sulphur is set free which is eliminated by the skin, and so sterilises the sweat by preventing the growth of the bacterium fœtidum. The use of formalin is also strongly advised. Dr. Slade Baker recommends that boracic acid be freely used, and states that he has adopted the treatment in a series of cases without failure.

THE TREATMENT OF "BLACK EYE."

WHEN the patient is seen early, before discolouration has set in, cold compresses or evaporating lotions are indicated; this reduces the swelling and limits the subsequent discolouration. But if the patient is seen after he has a fully-developed "black eye," hot compresses and massage are required. The affected portion is smeared over with vaseline and is rubbed for ten minutes several times a day. By frequent massage and continuous hot applications the discolouration may be almost entirely removed within twenty-four hours. The professional "black-eye" artists use a poultice of the scrapings of a root, which is thought to be bryony-root.—*Med. Rec.*

ANTIPYRIN ERUPTIONS.

THE continued use of antipyrin produces in some cases what is known as the antipyrin-rash, which may spread universally over the whole body, or be limited to more or less definite areas. In the latter case the parts affected are generally about the mouth, arms, eyelids, and extremities, especially the backs and palms of the hands, and the fingers and toes. The rash consists of raised, red spots, round or oval in shape, upon which vesicles appear. Healing takes place with a laminated desquamation or crust formation, and pigmentation frequently remains behind. This pigmentation is due to the rapid recurrence of the rash in the same part. It is supposed that the secretion of the drug by the sweat glands, salivary glands or kidneys causes irritation and subsequent discoloration of the parts.

ACTION OF DRUGS ON THE BILE.

DR. BAIN has published the results of an investigation upon the action of drugs and mineral-waters on the bile. A patient with a permanent cutaneous biliary fistula enabled the doctor to make his observations in a manner and for a length of time which had not previously been possible. The patient took the same amount of food, liquid, and exercise each day, and, in addition, 36 gr. of purified ox-bile daily, thus approximating experimental conditions to the normal standard. The bile was collected four times daily, a day's yield mixed together, and the quantity, sp. gr., bile solids, and bile salts determined. The following are some of the results obtained:—

—	Quantity of Bile in c.c.	Bile Solids in grammes	Bile Salts in grammes
Without medication ...	775	15·893	4·197
Euonymin	836	17·300	5·031
Benzoate of soda ...	856	18·514	—
Salicylate of soda ...	797	17·215	5·462
Podophylloresin ...	744	18·714	5·774
Iridin	788	17·764	5·088
Podophyllotoxin ...	758	14·311	4·044
Pint of hot water ...	785	16·519	4·207

THE TREATMENT OF SEA-SICKNESS.

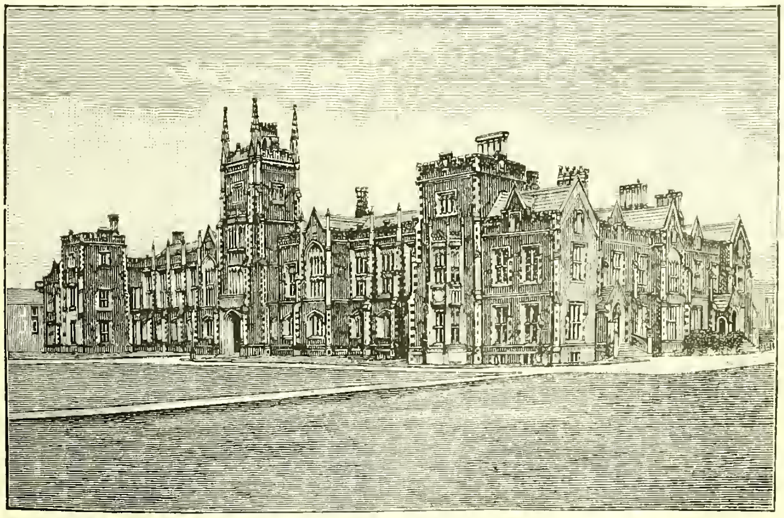
IN a recent issue of the *Lancet*, Dr. Hugh Taylor, of Southampton, gives the result of a five-years' experience in the treatment of this distressing malady while a ship-doctor in the North Atlantic passenger-trade. His opinion is that there are no means, either by drugs or otherwise, of controlling sea-sickness, and something which on one voyage materially palliates the patient often fails entirely on the next trip. The nausea and subsequent vomiting of the first few hours seldom require interference, but when the retching becomes distressingly violent and streaks of hæmorrhage appear, the best way to obtain relief is to apply a mustard-leaf to the epigastrium, give a hypodermic injection of morphia, some crushed ice to suck, and insist on a recumbent position being maintained. A whiff of amyl-nitrite or chloroform is often useful; alcohol should be avoided, but iced champagne may be sipped in very small quantities. The bowels must be kept freely open, either by an enema or suppository—preferably a glycerin ennle—as purgatives by the mouth will be at once rejected. Hot bottles, blankets, hot beef-tea, and, for general fluid nourishment, Valentine's Wyeth beef-juice or Brand's essence are all useful. The latter are better retained if previously mixed with a small quantity of powdered ice and administered in teaspoonful doses. As regards drugs, a mixture of nux vomica, lavender, and chloroform is recommended, and an alkaline stomachic mixture with nux vomica is also useful after the acute symptoms have vanished. For allaying restlessness or inducing sleep, a draught of bromide and chloral or a hypodermic injection of morphia at night. Many suffer from persistent and severe headache, but no sickness. Phenacetin and caffeine, bromide and chloral, or nitro-glycerin are beneficial in such cases. Others have a continuous intense giddiness, which is only alleviated by the maintenance of a horizontal position. Children rarely suffer severely, a gentle laxative and a little bromide and chloral soon putting them right. The doctor never knew any of the numerous "quack" remedies do any good, nor has he ever known the much-vaunted chloro-brom to be retained where bromides and chloral were rejected by the stomach. The best preparation for a sea-voyage to a person subject to sea-sickness is the taking of a blue pill followed by a seidlitz-powder.

BRITISH PHARMACEUTICAL CONFERENCE

35th Annual Meeting Belfast. August 9th 10th 11th 1898.

THE British Pharmaceutical Conference have this week paid their second visit to Ireland. The former session in the Sister Isle was in 1878, when the Conference, under Mr. Schacht's presidency, met in Dublin. There had been an earlier opportunity—namely, in 1874, in which year the British Association held its annual meeting in Belfast. Until then the Conference had religiously accepted the British Association's choice of localities. But in 1874 Irish pharmacy was in a transition state, if not something worse. The pharmacists of Ireland were fighting for a better position, and the apothecaries, who held the monopoly of dispensing, were defending their privileges. The physicians of Ireland were supporting the chemists, and the apothecaries, who were fighting a losing battle, were feeling somewhat sore. Under the circumstances, it was decided by the Executive Committee of the Conference that it would not be wise to hold the meeting in Belfast that year, and the result was that London was accepted as a harbour of refuge with Mr. T. B. Groves as the President. The invitation from Belfast and the manner in which the Local Committee have set themselves to prepare for the meeting have manifested the utmost cordiality. All classes of pharmaceutical workers have joined in earnest efforts to make the meeting a success, and the result of their labour will appear in the report which follows.

Grand Central Hotel, Headquarters of Conference.



Queen's College, where the Meetings were held.

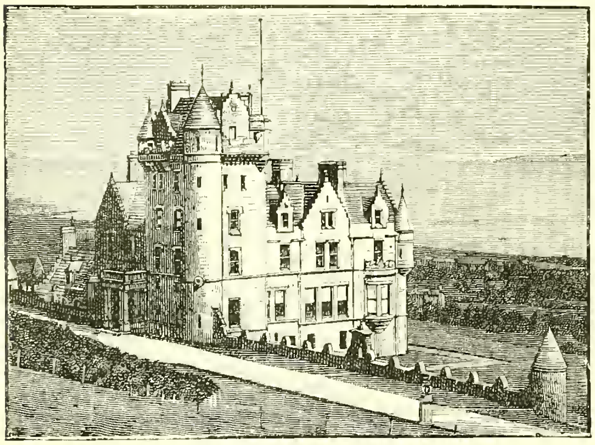
CONFERENCE EXCURSION.

As this journal will have to be at press before the excursion on Thursday is over, we have obtained an account of it in advance from a pharmacist who has quite recently covered the whole of the ground, and this may be taken as a report, subject to such aid or interference as the meteorological powers may see fit to impose. Our authority writes:—

The route selected for the Conference excursion is one of the finest in Ireland, and for variety, picturesque beauty, and rugged grandeur has few equals. Those who have never before visited the Emerald Isle may be surprised to find such scenery; but, visit Ireland where you will, Nature has blessed it in this respect with no meagre hand, as those who know the wilds of Donegal, the lakes of Kerry, the mountains of Wicklow, and the glens of Antrim can testify.

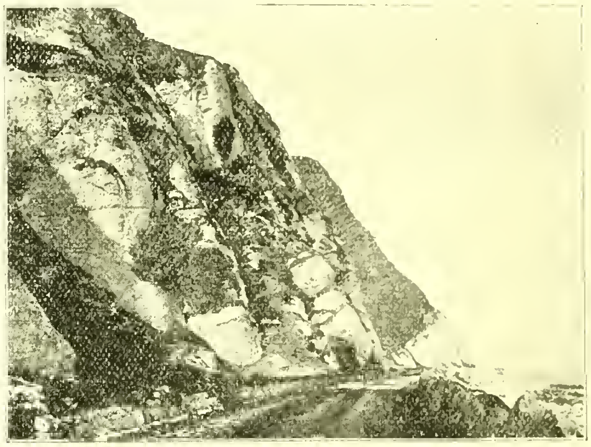
Soon after leaving York Road Terminus we have on our right a fine view of Belfast Lough, and on our left the Cave Hill and Belfast Castle, the residence of the late Lady Shaftesbury.

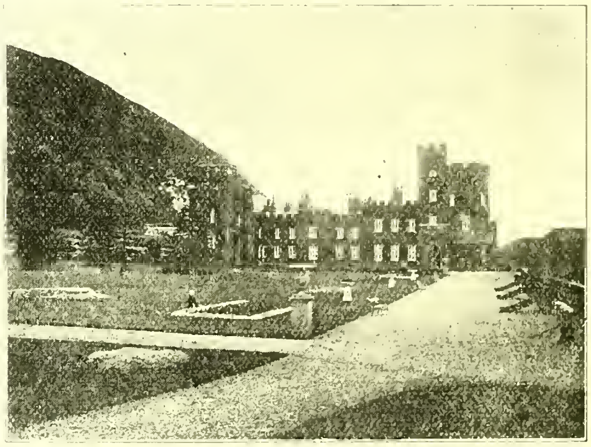
Carrickfergus, the first place reached of any importance, dates from the year 502 A.D., and its castle is the chief point of interest. It was built in the end of the twelfth century. It was here William III. landed before he fought the Battle of the Boyne, and the stone is still shown on which he stepped when landing. From Whitehead Station, at the mouth of Belfast Lough, the ivy-clad ruin of Castle Chichester can be seen, once a stronghold of the Donegall family. In a short time the train reaches Larne Harbour, where we join the coaches which are to convey us along the Coast Road. At the entrance to the harbour a monument, built after the fashion of the Irish round towers, has been erected to the memory of the late James Chaine, Esq., the owner of the port, whose remains were interred on the promontory overlooking the harbour, in the interest of which he was an indefatigable worker. Here also are situated alumina-works, the ore being obtained from the surrounding hills. Having started from the harbour, and turning to the right, we are soon in sight of the ocean, which bounds the road on one side, while on the other the bluff headlands rise to a height of 800 feet. The road is in many places cut out of the solid limestone. Soon we come in sight of "The Maidens"—twin lighthouses which keep guard over the Irish coast. It will be noticed how their relative positions seem to vary when viewed from different parts of the road.


Belfast Castle and Lough.

Black Cave Tunnel, Antrim Coast Road.

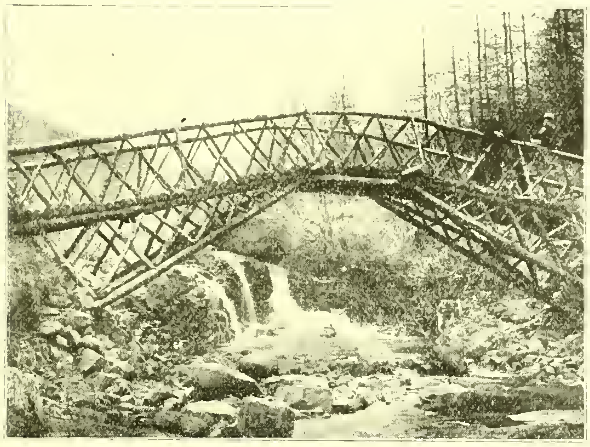
Glenarm Bay, Harbour, and Garron Point.


Garron Point, Antrim Coast Road.


Garron Tower, Antrim Coast Road.

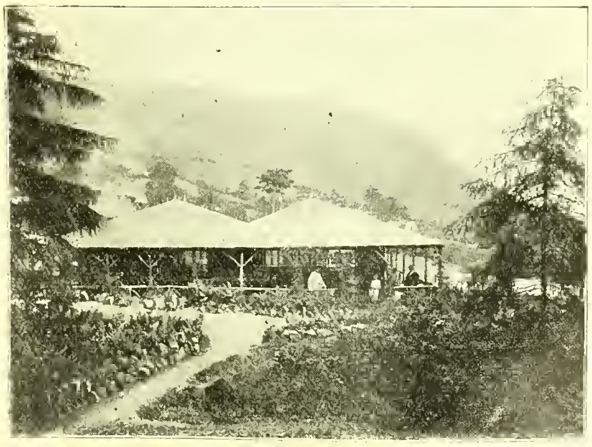
Glengariff, at the "Meeting of the Waters."

The first promontory is known as Black Arch Head, on the other side of which is a sort of basin formed in the solid rock, with a submarine inlet, known as the Devil's Church. Rounding the next bay we come to Ballygally Head, the face of which has enormous basaltic pillars similar to those of the Giant's Causeway, and which have been called by the residents the "corn-sacks." Nearly opposite, on a detached rock, stand the ruins of an old castle, built two hundred and fifty years ago, and which fell into the hands of the rebels in 1641. With this is associated the well-known tale of "O'Hallern, the Insurgent Chief."



The Rustic Bridge, Glengariff.

The road from this part is very interesting, as headland and bay alternate with ever-varying effect for many miles, and we are sure the aspect as seen by us must be very different from that of winter, when the sea in its fury breaks on the gigantic masses of rock and stone. Twelve miles from Larne we reach Glenarm, a pretty little seaport town standing at the mouth of a beautiful valley. Limestone and iron ore are shipped to Scotland in large quantities from here. Leaving the town we get a view of Glenarm Castle, built in 1639, the residence of the Earl of Antrim; we are soon in sight of Carnlough, with its beautiful sandy beach. The harbour was formed by the late Marchioness of Londonderry. Garron Head soon comes into view, and looked at from either side it shows that the part on which the tower stands has at some distant period slipped down from the ground above, where it formed part of Knochore Hill. Glad to stretch ourselves, we leave our coaches and stroll into the beautifully wooded grounds, which are tastefully laid out. Here we partake of dinner, and our photograph is taken. Viewed from the tower grounds the scenery is magnificent. It was until lately used as a summer residence by the Londonderry family, and was then filled with many curiosities and war trophies, but these have all been removed, and only a few old cannon remain. The gardens, greenhouses, and rosery display an amount of taste and skill seldom surpassed, and are all the more striking here amidst their rugged surroundings.



The Tea-house, Glengariff.

Seats, ladies and gentlemen, seats is the call, and we are again on our way, passing a peculiar rock by the wayside known as the White Lady, as it closely resembles the figure of a lady dressed in white; it is said that the wind blowing through its cracks and crevices produces sounds like the cry of seamen in distress, which are sometimes regarded with superstitious feelings by the peasantry. Here occurs a great succession of vast cliffs from 500 to 800 feet high, the upper portion being almost perpendicular; here and there they are broken by deep gorges and ravines, which vary the scenery and render it more imposing and grand. Turning into Red Bay, the Glens of Antrim, of which Glenariff is the loveliest, open out before us, and looking across the sea we behold the distant hills of Scotland, forming a picture of surpassing grandeur. A lot of money has been here expended in constructing a railway and building a pier, but this has ceased to be used. Passing the little village of Waterfoot we turn to the left—having

"The Tears of the Mountain," Glengariff.

Castle Place, Belfast.

left our coaches to meet us at the upper end of the glen, which we traverse on foot, going either by the left or right bank. Nowhere can anything approach the beauty of the vale of Glenariff: such a wealth of trees, shrubs, grasses, ferns and flowers, noble hills rising on either side, one waterfall vying with another in imposing grandeur—foot-bridges across some of the chasms of the ravine, rustic houses at the finest points of view, pathways cut out of the sides of the precipitous rocks—Nature everywhere pouring out her riches in a manner that astonishes the observer, and leaves an impression that lingers long in the memory. When we reach the upper end of the glen our elevation is 800 feet higher than when we started. Here our coaches await us, and we are soon rolling along to Parkmore Station, where, after a refreshing cup of tea, we take train by narrow gauge to Ballymena, and return to Belfast at 9.30, delighted with our trip, and confessing quietly to ourselves that Ireland is not such a dreadful place after all.

[The views of the excursion scenery are all from photographs by Mr. Welch, Belfast.]

FIRST SESSION, TUESDAY MORNING.

Brilliant sunshine from the heavens, and "hearty congratulations" from Philadelphia greeted the members of the British Pharmaceutical Conference when they met in Belfast on Tuesday morning. Professor Remington sent the congratulations, and doubtless in his American home he remembered the success of last year's meeting in Glasgow, to which he largely contributed. Everything seemed to conspire to make the Belfast meeting even "one better" than that at Glasgow. Queen's College, said Lord Macaulay, is worthy of the High Street, Oxford, and practically the whole of the college was placed at the disposal of the Conference by the authorities. The library of the college is a magnificent hall, and there the sessions of the Conference were held. At 10.10 on Tuesday morning Dr. Charles Symes, F.C.S., President of the Conference, ascended the platform amidst applause. He was accompanied by the leading members of the Executive, Messrs. Atkins, Martindale, and Stanford (Past Presidents), Professor Hamilton, principal of Queen's College, Sir James Haslett, M.P.; Messrs J. C. C. Payne, Watson, Clotworthy, Rankin, and other members of the local committee; Dr. Nelson (President of the Ulster Medical Association), Professor Whitla; and a novel and pleasing feature was inaugurated by Mrs. Hamilton, wife of the Principal, joining the President on the platform. About two hundred ladies and gentlemen were present when the Lord Mayor of Belfast entered the hall a few minutes after the President, and the meeting stood up to honour him. Proceedings were at once commenced.

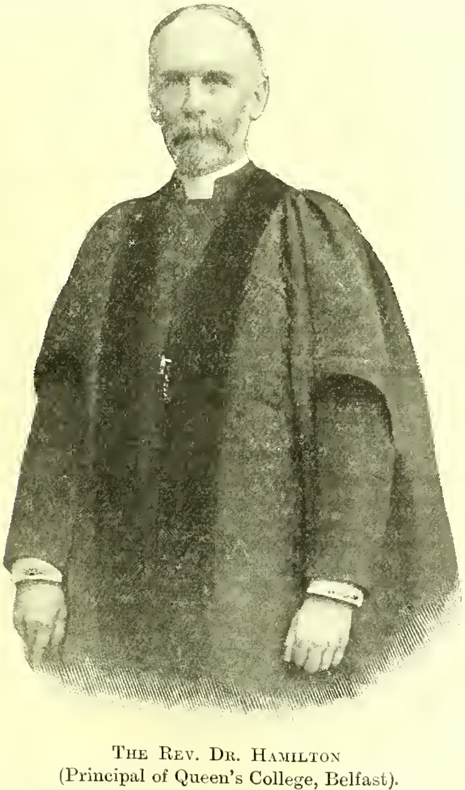
Official Welcome.

The Right Hon. the **Lord Mayor** of **Belfast**, Alderman James Henderson, M.A., J.P., rose to officially welcome the delegates. He said: Mr. President, ladies, and members of the British Pharmaceutical Conference,—A very pleasing task devolves upon me, and one which I am very pleased to hear from your President may be a short one. The few words I have to utter to you can be nothing else but complimentary, and I can assure you that on this occasion I speak as one who takes an interest in this very excellent Association here as well as in other parts of Ulster, that we are delighted you have selected Belfast for your visit, and we hail with the greatest pleasure the benefits bound to accrue from the excellent papers to be read and the discussions which will follow. I am very much pleased to hear from your President that the very fact of the visit of this important body to such a city as Belfast always does good. (Hear, hear.) It is a gratifying fact that all those deficiencies which sometimes arise in associations seem to be removed, and such visits as the present are bound to have that effect. (Applause.) I have had the pleasure, since I was honoured with the position of being Lord Mayor, to welcome several important associations to the city; but I can say that there is none we are more dependent upon, or one that I have a greater respect for, than your Association. (Hear, hear.) We are all subject to the ills to which flesh is heir, and if your Association cannot cure them I do not know where we are to look for aid. (Laughter.) When I see such excellent men around me—men of whom I have heard, and whose characters have been stamped on the books they have written—I am sure the visit of this Conference to Belfast will do immense good, and we will be rejoiced that we have received the British Pharmaceutical Association in Belfast (Hear, hear.) I notice that your first meeting was held in Newcastle in 1863, and I observe an important resolution in your book for that year; for the reports of those annual meetings and the papers are published every year as a record of what is taking place—an excellent idea that might be followed by kindred associations. The resolution to which I allude was put on the books by one of the members who has had more to do than anyone else in bringing the Conference to Belfast. I refer to Mr. Payne. (Applause.) I do not wish to praise that gentleman in his presence. Mr. Payne is

The Lord Mayor of Belfast
(Alderman James Henderson, M.A., J.P.).
Photo by Abernethy, Belfast.]

a man who does not care about flattery, but he occupies one of the most important positions in Belfast. He is a most useful citizen, and when we are in any difficulty, either in the magisterial position or any other way, we have only to call upon him, and he assists most loyally. (Applause.) The point I wish to mention is that Mr. Payne brought forward a resolution that "in the future their Conferences do not of necessity meet in the same town and at the same time as the British Association." That was a wise rule, and I congratulate the Conference in having agreed to it. The British Association is one of the most important bodies we have in the country, and no other meeting—no matter how important—should clash with its arrangements. I can assure the members of this Association that we are very pleased to have you in Belfast, because while you are here I hope, with the assistance of the two ladies on my right and left, that you will have an opportunity of seeing all there is to be seen in Belfast. This is now the largest city in Ireland—(hear, hear)—and I think you will agree with me that it is a very fair city to take charge of. We have several very excellent boards, the members of which do their duty in a most admirable manner without fee or reward, and it is one of the most gratifying facts of public life to see the very strict attention that the members of the various public boards pay to all their duties. I congratulate you very much on your presence in Belfast, and I can assure you, on behalf of the citizens, on behalf of the Corporation, and on behalf of the other boards to which I have referred, that you are welcome most heartily to our city. (Applause.)

The Rev. Dr. **Hamilton**, who was warmly greeted, said:—It is my pleasant privilege, on behalf of the Queen's College, to give a hearty welcome to the members of the British Pharmaceutical Association. When my friend Mr. Payne—and every word spoken about him by the Lord Mayor I most heartily endorse—called upon me in company with their honorary local secretary, Dr. Fielden, to ask the use of the buildings for their meetings, it was with the greatest pleasure that I was able to accede to their request. Fortunately their meetings occurred in our July vacations, when the college is empty, and when, consequently, without interfering with our proper business, we could welcome you and afford you every facility in our power. It has been our good fortune in our college to receive many very important and distinguished public bodies. The British Association for the Advancement of Science met twice here—first in 1852, and afterwards in 1874, under the presidency of my dear and lamented friend the late Professor Tyndall. (Hear, hear.) Later on we received the British Medical Association, who had a memorable meeting within the walls of the college, and since that time various other important public bodies—such as the Journalists' Institute, the Institute of Mechanical Engineers, and others—were gladly given accommodation for their annual meetings; but I can truly say that to nobody have we given, or could we have given, a heartier welcome than we give to your Association. (Applause.) I quite agree with my friend the Lord Mayor as to the importance of the pharmaceutical chemist in our daily life. The doctor is a very important personage when we are ill, but what could a doctor do if his prescriptions were not carefully compounded with the purest drugs, accurately weighed and measured, and put up in such a way as to almost tempt the appetite of the patient? (Laughter and applause.) I have much pleasure in cordially welcoming you to Belfast and this college. (Applause.)



The Rev. Dr. Hamilton
(Principal of Queen's College, Belfast).
Photo by Kilpatrick, Belfast.]

The **President** of the Conference (Dr. Symes), who, on rising to deliver his presidential address, was very cordially received, said he had in the first place to express the indebtedness of himself and the delegates to the President of the College, and the Lord Mayor of Belfast for their presence amongst them, and for the kindly manner in which they had spoken to them. It was clear that they had made themselves familiar with the objects of the Conference, and were thoroughly in touch with the aims which they wished to accomplish, and they all appreciated very much the kindness of the President in placing the college at their disposal for the carrying out of their programme. (Hear, hear.) They met that morning under most pleasurable circumstances, and he should like to meet the man or woman who did not understand the warmth of the welcome extended to them. It made them all feel so much at home. (Applause.) They felt that they had been in Belfast quite a long time, and by removing the want of sympathy amongst strangers the words of the Lord Mayor and President Hamilton made them realise that they were amongst good friends. (Applause.) On behalf of the Conference he desired to thank those gentlemen for the very cordial welcome which they extended to them. He knew the Lord Mayor had a very busy day before him, and it must have been at no small inconvenience he was with them that morning. They must know that in the administration of the affairs of so large a city as Belfast the Lord Mayor had a busy and anxious time, and they would therefore excuse him when he could not be amongst them during the course of their deliberations. A Lord Mayor could do most things, but he could not well be in two places at one time. (Laughter.) They thanked the gentlemen who had spoken, and they greatly appreciated the very hearty welcome which they had given them. (Applause.)

[The Lord Mayor, who spoke in a very easy style, wore his chain of office; and it may be here mentioned that he sat out the address comfortably, and seemed well posted on pharmaceutical matters.

Dr. **Symes** rose at 10.31 to deliver his address, which was listened to throughout with exceptional attention, the references to the Pharmacopœia and reciprocity being particularly well received. The following is the full text of the address, the delivery of which occupied thirty-seven minutes:—

THE PRESIDENT'S ADDRESS.

A second time in our history has the "Sister Isle" invited the British Pharmaceutical Conference to hold its annual meeting of members on Irish soil, and a second time has it given us the greatest possible pleasure to accept the invitation. Those of us who attended the Dublin meeting just twenty years ago, under the Presidency of the late lamented George Frederick Schacht, will remember the enthusiastic reception accorded to us by our Irish friends on that occasion; the warm and deep interest shown in our proceedings, the large-heartedness and fellowship which marked the period of our visit, and the lasting friendships which were formed. To-day this great and beautiful city of Belfast offers us equally friendly greetings, and thus assures us of its loyalty to the cause we seek to promote.

The Science of Pharmacy

knows nothing of political differences or diplomatic relations. It simply recognises in the broadest manner the brotherhood of pharmacists, the consolidation of thought, the consensus of opinion of those who practise it, the promotion of whatever conduces to the elevation and advancement of our calling. A more complete knowledge of the materials and the achievement of greater perfection in the appliances with which we have to deal; greater ability to fill our legitimate position as joint labourers with the sanitarians in the prevention of disease, and with the medical profession in the noble work of alleviating human suffering and in the healing art. In short, whatever pertains to the real good and the general advancement of the craft.

This general advancement is attempted and we believe is, to a considerable extent, accomplished by means which may be divided under several distinct heads, but all bearing close relationship to each other. First and foremost amongst these stands education. Up to the dates of the passing of the Pharmacy Acts every man was a law to himself as to how much knowledge he cared to possess for the conduct of his business, but I am not one of those who believe that in the earlier days a relatively greater proportion of ignorance prevailed in pharmacy than during the early days of other professions. In fact, a little reflection will bring to mind the names of "pharmaceutical giants" who existed before the Pharmacy Act found a place in the statute-books, and whose work will always be recognised as the foundation on which our craft has been built. What, however, has happened is that all who practise our craft must now possess knowledge up to a certain standard, and that standard, determined by the Councils of the Pharmaceutical Societies of Great Britain and Ireland respectively, is applied by the various boards of examiners.

Dr. C. Symes.

Examinations

are undoubtedly a stimulus to study, and being conducted largely by men who understand the requirements of the examinees, they are extremely useful, and in great measure accomplish the object contemplated; but the thoroughness with which the knowledge is acquired to pass them, and the way in which that knowledge is afterwards applied, is the true measure of usefulness both to ourselves and the public. The chief danger of our present system is that men will be content with the minimum of knowledge necessary to pass the qualifying examination, and will then believe that they have done all that is requisite in the way of study to fill the position in life which they have chosen; whereas, in my experience, which now extends over a number of years, the majority of men, when just fresh from their examinations, are then only in a position to learn how to expand, apply, and increase their knowledge for the efficient performance of their duties. This does not apply to pharmacy alone; indeed, so much did it apply to the medical student that, some few years ago, the curriculum was extended to include one year of practical application of the knowledge possessed before registration by the Medical Council.

Now, at this point the value of a body like the British Pharmaceutical Conference becomes evident. It at once points out to the legally-qualified man that there is no finality to his knowledge, that he has merely entered the legitimate portal to the field of applied science, investigation, and research, and it offers him encouragement to devote himself more closely to the higher branches of his calling, and thus not only to give deeper interest to it, but to sweeten the labour and drudgery attendant on the more common-place matters which go to make up the daily round of duty. Experts in chemistry, physics, botany, materia medica, and other branches of science are busily engaged unfolding the mysteries of Nature, and it is an essential part of the pharmacist's duty to keep himself posted in the advances which are made, or he will soon drift behind the times and lose the position which he holds in public opinion. In addition to the foregoing, an acquaintance with technical matters is essential.

As British subjects we are all amenable to the Imperial laws, but there are some of these which have a special bearing on our calling, and which define our relations to the State, the public, and to ourselves. A knowledge of these is most essential to us, and yet, until recently, no steps were taken either to teach the essential points contained therein, or to ascertain if the man who desired a certificate of qualification possessed a reasonable amount of knowledge concerning them. It is gratifying to note that in Great Britain (and I trust the same applies to Ireland) candidates for examination are now required to show that they possess a practical knowledge of the one special law which regulates their calling. Not only the Pharmacy Acts, but the Food and Drugs, Weights and Measures, Poisoned Grain, Arsenic, Petroleum, Patent-medicine Acts, Licensing and Excise Regulations, all have points of special interest for us; indeed, I question whether there is any other calling on which so many Acts of Parliament have such a special bearing.

Many persons look on

The Pharmacy Acts

as measures whereby we have voluntarily imposed unnecessary burdens on ourselves. But without going into very ancient dates in the history of pharmacy, it may be pointed out that these measures were in the first instance obtained as a means of protection, and of complying with the requirements of public opinion. The medical profession on the one hand, and the Government on the other, had from time to time endeavoured to obtain legislation which would materially, and it was feared prejudicially, affect the pharmacist's interests, and he had stood firmly and successfully on the defensive. The time arrived, however, when it was felt that some kind of organisation and legislation was absolutely necessary, and it was thought that it would be better to make an effort to accomplish this for ourselves rather than to leave it to others who could not fully appreciate the requirements and position of our craft. If, therefore, we are at times disposed to complain that the Pharmacy Act is not what we could wish it to be, and is defective in some important points, we must bear in mind that it was the result of a compromise, and that had it been left entirely to those outside our calling it would doubtless have been more imperfect than it now is, and we should have been burdened with some oppressive measures from which we are now free. The recently obtained Amendment Act making membership of the Society open to all who pass the qualifying examination, and in this way giving everyone who is to be legislated for a voice in the election of the governing body, and power to become a member thereof, is calculated to consolidate the Society, and hence is a step in the direction of consolidating the whole craft.

Miss Guiler. Mrs. S. C. Nicholl. Mrs. Gibson. Mrs. R. W. McKnight.

Mrs. S. Gibson. Miss Watson. Mrs. Clotworthy. Mrs. J. C. C. Payne. Mrs. Elliott.

THE LADIES' LOCAL COMMITTEE.

The recent attempt of the Privy Council to pass the Poisonous Substances Bill points to the desirability of consolidation for opposing such measures when from time to time they arise. The Privy Council have persistently refused to place carbolic acid—one of those deadly poisons by which so many persons have lost their lives—on the poison schedule of the British Pharmacy Act, although this has been done in Ireland, and notwithstanding the pressure brought to bear on them by the Pharmaceutical Society, coroners, juries, and municipalities. I believe this is chiefly due to a considerable amount of misrepresentation made to that body as to the possible restriction of trade in this article if such were done. As a sort of compromise this Bill was introduced into, and passed, the House of Lords—a crude, imperfect, erroneous measure which met with such opposition as to render a first reading in the House of Commons impracticable. If evidence is at any time required of the impracticability of a Government Department attempting to legislate on such matters, this unworkable Bill may be held up in proof thereof.

The Irish Pharmacy Act, which is of more recent date than that of Great Britain, has most of its clauses based on those of the latter, but so modified as to meet the existing condition of pharmacy in Ireland at the time of its passing. It, too, is the result of a compromise, and leaves something to be desired on the part of our Irish friends. The united action of the two Societies, if unable to bring about all the good desired, may do much in that direction. I look forward with hope and confidence to the time when there will be increased unity amongst all English-speaking pharmacists and pharmaceutical societies, and when there will be sufficient uniformity in the various qualifications to enable reciprocity to exist amongst them all. In some of the colonies it is admitted that something has to be done before this can be accomplished, but it is clearly our duty to do what we can to forward any movement which is calculated to bring about so desirable a consummation.

For several years efforts have been made to pass an amended

Food and Drugs Act,

and it is very generally acknowledged that the present Act requires some amendment. So congested, however, has Parliamentary business been that still another Session has nearly closed without a prospect of the proposed new measure becoming law. It is one of the objects of the Conference "to maintain uncompromisingly the principle of purity in medicines." We therefore hail with satisfaction anything which contributes to this object, and when we consider how small has been the number of proven cases of deliberate and fraudulent adulteration in recent years under the existing Act, I think the Conference may be congratulated on its good and useful work in investigating and exposing circumstances of this kind during the many years of its existence.

During the past twelve months the use of

The Metric System

of weights and measures for commercial purposes has been legalised in Great Britain and Ireland. This must be regarded as a step in the right direction, for it previously seemed absurd that a business house could not use actual weights and measures in executing an export order for so many grammes, litres, &c., of an article without committing an illegal act; but so it was. Now, this permissive stage will familiarise the public, slowly, with this system, which is more scientific and, when well known, is more simple than our own. But I have some sympathy with those who would not hastily have its general use made compulsory, as it takes a long time before the public mind is brought to think of quantities in metric terms instead of, as now, thinking in our own system, and then converting it into metric equivalents when necessary. If an apple is cut into two equal portions, and again each is equally divided, it seems much more easy to think of one of these as a quarter than as ·25 of the whole, or, if the division is carried one stage further, an eighth is more easily realised than ·125. The way in which a number will become fixed in the mind, and influence thought, is illustrated by the fact that although the decimal system has been used in France (where it originated) for so many years, one still sees in Paris some goods offered in the shops by the "dozen." Some thirty-eight years ago, I remember, Professor Redwood endeavoured to impress his students with the desirability of thinking in metric quantities, and suggested that those who were familiar with the size of the small dice would be assisted in realising the quantity of a cubic centimetre by regarding them as about equivalent values.

Considerable alteration in our coinage will also be required before the decimal system can be rendered general in this country. As pharmacists it is our duty to familiarise ourselves with its use, and thus be prepared to forward a movement which will no doubt sooner or later obtain throughout the country, and which at present is used almost invariably for scientific purposes.

Most of us are not affected sufficiently by

The Petroleum Act

to call for much comment thereon, but the regulations concerning the storage and sale of benzine have a decided bearing on our calling; and carbide of calcium, now largely used for the production of acetylene gas for illuminating-purposes, has recently been brought under its provisions. The sale of the carbide is a legitimate part of a pharmacist's business, and it is satisfactory that an exemption has been made whereby it may be kept and sold without a licence, so long as it is stored in 1-lb. hermetically-sealed canisters, and not more than 5 lbs. be kept in stock at any one time.

The Inland Revenue Regulations

affecting us remain the same as they have been for several years past, and we have still to regret that the abuse by a small section of the public of the methylated-spirit privilege should have resulted in altered methods of methylating, which inconveniences a much larger section and modifies materially the advantages which we derive from its sale and use. The present kind, methylated with mineral naphtha, and which becomes turbid on mixing with water, is unsuitable for many purposes where the old kind containing wood naphtha could be used. It is true that the old kind can still be obtained under certain conditions for manufacturing-purposes but those pharmacists who formerly supplied pathologists and institutions with it can no longer do so; thus their business suffers without, so far as I can ascertain, any equivalent advantage to anyone. I think some strong representation should be made to the Inland Revenue authorities with a view to getting this alteration repealed.

Turning now to the necessity for keeping up our knowledge of modern chemistry, we have evidence of this from the ever-growing list of physiologically active

Synthetic Organic Compounds.

Many of these, which have been built up on theoretical considerations, have become valuable medicinal remedies. The fancy names given to them, however, rarely afford much idea of their composition, and without this we handle them in a very mechanical way, and lose much of interest that would otherwise attend the dealing with them. The pharmacist knows the nature and qualities, the habitat, process of production, and manufacture of the ordinary drugs and chemicals which he uses, and it is this knowledge, together with care and experience in handling them, which in the eye of the law constitutes qualification for the practice of his profession. It seems only reasonable, therefore, that he should familiarise himself as far as possible with the numerous class of substances which I have mentioned, for, although they are of a complex nature, they are capable of much simplification by the consideration of the theoretical constitutions ascribed to them. It will be remembered that Mr. Hodgkin read a very excellent paper on this subject at a meeting of the Conference held at Leeds in 1890. More recently Dr. Kohn, in an address delivered at a meeting of the Liverpool Section of the Society of Chemical Industry, dealt with the relation which exists between the physiological action and the chemical structure of these bodies. I have said that these remedies have been "built up," and the term is an appropriate one, as it conveys to one's mind what actually happens. The scientific chemist is now the architect and builder, using certain atoms and molecules to build up chemical structures to meet the wants of the medical profession in the treatment of disease.

In Germany, where there are fewer restrictions on experimenting with animals than in this country, the chemist and physiologist work together, the one altering the molecules and molecular arrangement in the chemical, and the other testing and noting most carefully the effects obtained thereby; hence most of these remedies are produced in that country, and this manufacture has become an extensive chemical industry. I would not be understood to object to the use of fancy names instead of descriptive ones for these synthetic substances, as obviously the use of the latter would in many cases be impracticable. For example, it is much more convenient to speak of or write antipyrin than phenyldimethylpyrazolon, and of eucaine rather than benzoyl-methyl-tetra-methyl-γ-oxy-piperidine-carbonic-methyl-ester. Just as it is more convenient to speak of a cottage, villa, or mansion rather than to use a name which would describe the materials of which either is built and its dimensions. What I hold is that each package or wrapper in which these substances are enclosed should bear a clear and concise description, the formula, and, where practicable, tests should be named whereby it could be identified.

Since the publication of Mr. Hodgkin's paper many new synthetic remedies have been introduced, and it may be convenient here to enumerate some of them, together with their formulæ.

Agathin (salicyl-methyl-phenylhydrazone) [$C_6H_4.OH.CH.NH.CH_3.C_6H_5$], antirheumatic.
Airol (bismuth-oxyiodogallate) [$C_6H_2(OH)_4CO_2BiI$], antiseptic.
Argonin (silver caseinate), antiseptic.
Aristol (di-thymol-iodide) [$C_{20}H_{24}O_2I_2$], antiseptic.
Analgen (ortho-ethoxyana-monobenzoyl-amido-chinolin) [$C_9H_5(OC_2H_5)NH(CO.C_6H_5)Na$], antipyretic analgesic.

Antisceptol (cinchonine iodo-sulphate), antiseptic.

Asaprol (calcium-betanaphthol-sulphonate) [$CaC_{20}H_{14}S_2O_8 + 3H_2O$], antirheumatic, antituberculous.

Aseptol (phenol-sulphonic acid) [$C_6H_4(OH)SO_3H$], antiseptic, disinfectant.

Alumnol (alumina naphtho-sulphonate), astringent, antiseptic.

Benzosol (benzoyl-guaiacol) [$C_6H_4(OCH_3)OC_6H_5CO$], antituberculous antiseptic.

Bismal (bismuth methylene-digallate) [$4C_{15}H_{12}O_{10}3Bi(O.H._2)$], astringent.

Bromol (tri-bromo-phenol) [$C_6H_2.Br_3O\ H$], antiseptic, and disinfectant.

Chloralamid (chloral formamidate) [$C_3H_4O_2Cl_3N$], hypnotic and analgesic.

Creosol (homo-pyro-catechin-mono-methyl-ether) [$C_6H_3CH_3(OCH_3)OH$], antiseptic.

Hypnal (chloral-hydrate-antipyrin) [$CCl_3CH.(OH_2)C_{11}H_{12}.N_2O$], analgesic, antipyretic.

Hypnone (phenyl-methyl-ketone-acetophenone) [$C_6H_5CO.CH_3$], hypnotic.

Iodol (tetra-iodo-pyrrol) [C_4I_4NH], antiseptic.

Itrol (silver citrate) [$Ag_3C_6H_5O_7$], antiseptic in treatment of wounds.

Lactophenine (lactyl-amido-phenol-ethyl-ether) [$C_6H_4(OC_2H_5)NH.CO.CH(OH).CH_3$], analgesic.

Loretin (ortho-oxychinolin-m-iodo-ana-sulphonate) [$C_9H_4NI.OH.SO_3H$], antiseptic.

Lycetol (dimethyl-piperazin-tartrate), analgesic, diuretic.

Losophan (tri-iodo-meta-cresol) [$C_6HI_3.OH.CH_3$], astringent, antiseptic.

Lysidine (methyl-dihydro-glyoxaline) [$(C.H_2)_2NH.N.C.CH_3$], uric-acid solvent.

1. W. J. Gibson. 2. Johnston Montgomery. 3. T. M. Moffatt. 4. S. Acheson. 5. James Tate. 6. P. J. Lyons. 7. J. H. Shaw. 8. S. Clotworthy. 9. W. J. Rankin. 10. R. W. McKnight. 11. J. C. C. Payne, J.P. 12. S. Gibson. 13. Jas. Guiler. 14. J. W. Elliott.

Photo by Abernethy, Belfast.] THE LOCAL EXECUTIVE COMMITTEE.

Diuretin (theobromin-sodium salicylate) [$C_7H_7N_4O_2.Na + C_6H_4(OH)CO_2N$], diuretic.

Durol (tetra-methyl-benzol) [$C_6H_2CH_3CH_3CH_3CH_3$].

Dermatol (bismuth-sub-gallate) [$Bi(OH)_2C_7H_5O_5$], astringent, antiseptic.

Eucaine-hydrochlor. (benzoyl-methyl-tetra-methyl-γ-oxy-tetra-piperidin-carbonic-methyl-ester) hydrochloride. [$C_{19}H_{27}NO_4\ HCl + H_2O$], local anæsthetic.

Europhen (iso-butyl-ortho-cresol-iodide) [$C_4H_9(CO_3)(O)C_6H_3C_6H_2.OI.CH_3C_4H_9$], antiseptic, antisyphilitic

Guaiacol synthetic (pyro-catechin-methyl-ether) [$C_6H_4(COH)COH_3$], antituberculous antiseptic.

Guaiacol carbonate (guaiacol-ester carbonate) [$C_6H_4(OCH_3)2CO_3$] antituberculous antiseptic.

Heliotropin (piperonal), proto-catechu-aldehyde-methyl-ester; antiseptic, antipyretic; used also in perfumery.

Malakin (salicyl-amido-phenol-ethyl ether) [$C_{15}H_{15}O_2N$], antiseptic analgesic.

Microcidin (sodium beta-naphtholate), used in antiseptic surgery.

Nosophen (iodophen) tetra-iodo-phenol-phthalein [$(C_6H_2I_2OH)_2.C.C_6H_4CO.O$], antiseptic, disinfectant.

Orthoform (para-amido-m-oxybenzoic-methyl-ester), local anæsthetic.

Peronine (benzyl-morphin-hydrochlorate) [$C_{17}H_{18}NO_2\ O.C_6H_5.CH_2\ HCl$], narcotic.

Phenocoll hydrochloride (amido-acet-phenetidin-hydrochlorate) [$C_6H_4(OC_2H_5)(NHCOCH_2NH_2)HCl$], analgesic, antirheumatic.

Piperazin (diethylene-diamine) [$C_2H_4(NH_2)C_2H_4$], antirheumatic.

Piperonal (heliotropine), see above.

Resorcinol (iodoform and resorcin), antiseptic dressing.

Salophen (acetyl-para-amido-salol)
$[C_6H_4OH.COO.C_6H_4N.H.COCH_3]$, antiseptic, antipyretic.
Salipyrin (antipyrin-salicylate) $[C_{11}H_{12}N_2OC_7H_6O_3]$, antipyretic, analgesic.
Salacetol (acetol-salicylic-ester)
$[C_6H_4(OH).COO.CH_2CO.CH_3]$, antiseptic antirheumatic.
Symphorol N. (caffeine-sodium-sulphate) $[C_8H_9N_4O_2.SO_3Na]$, diuretic (also lithium and strontium salts).
Tannalbin (tannin-albuminate), astringent.
Terpinol (terpinehydrate derivative) $[(C_{10}H_{16})2H_2O.D]$, used in bronchial affections and in perfumery.
Tetronal (diethyl-sulphon-diethyl-methane)
$[(C_2H_5)_2 C(C_2H_5SO_2)_2]$, hypnotic and sedative.
Thalline sulphate (tetra-hydro-para-chinanisol sulphate)
$[(C_{10}H_{13}NO)_2H_2SO_4]$, hæmostatic and antiseptic.
Triphenine (proprionyl-phenetidine)
$[C_6H_4OC_2H_5NHC_2H_5CO]$, analgesic, antipyretic.
Thermodine (acetyl-*p*-ethoxy-phenyl-urethane)
$[C_6H_4(C_2H_5O)NCO_2C_2H_5COCH_3]$, antipyretic, antiseptic.

Creoline, lysol, solveol, and solutol are more or less impure cresol mixtures obtained from coal tar.

Of the fifty substances enumerated, it will be noted that a large percentage possess antiseptic, antipyretic, and analgesic properties; so that their rapid growth would seem to be due more to commercial enterprise than to meeting a real want in medical practice.

Another chemical industry which has considerable interest for the pharmacist is the production of

Synthetic Esters and Odorous Substances

closely related to the odours of flowers, plants, and animal substances. With artificial musk and vanillin we have been long familiar, as also with the amyl, butyl, and ethyl compounds resembling fruit flavours; but of more recent date we have heliotropine, ionone, and iraldine (violet), cumarine (new-mown hay), terpinol (lilac), bergamiol or linaloyl acetate (bergamotte), nerolin (neroly), jasmin oil, anisic aldehyde (hawthorn), geranol (rose-geranium), carvol (caraway oil), safrol (oil of sassafras), &c.

So much has this industry grown that not only are these products used for toilet-soaps, but enter largely into the composition of the essences named after the flowers. They are more persistent than the natural odours, and I am told that the very popular essence of "Parma Violets" is, as a rule, quite innocent of the flowers, and is prepared from ionone mellowed down with small quantities of other extracts, and this the public really prefer. To those, however, who are accustomed to handle delicate perfumes there is not so much difficulty in distinguishing between the artificial and the real, and it still taxes the skill of the chemist and the art of the perfumer to obtain that subtle delicacy of fragrance manufactured and elaborated in Nature's own laboratory.

Although

Paraffins, Hard and Soft,

have been much used as applications to the skin, it has generally been recognised that they are not readily absorbed by it, and their use as a vehicle for various medicaments has been objected to on that ground, the addition of lard or wool-fat being considered necessary to obtain the desired result. The great advantage which the paraffins possess of not becoming oxidised by exposure to the air, hence of not becoming rancid, has acquired for them considerable popularity and an extensive use. Of comparatively recent date there has been introduced from Germany a class of liquids which are said to be oxidised paraffin oils, medicated in various ways, and known as valsols. The oxidation is said to bring them into a condition in which they are readily absorbed by the skin, and thus rendered valuable vehicles for the medicaments they carry. This statement as to oxidation seems so contrary to our previous notions concerning the paraffins that an investigation into the subject would be of considerable interest, and would form matter for a paper at a future meeting of this Conference. In the meantime I would not wish to question the value of these bodies, but, so far as I can judge, it is not the pure paraffin which becomes oxidised, but rather the various substances usually found accompanying it in the commercial article.

In the world of pharmacy, the event of the year has been the publication of

The New British Pharmacopœia,

superseding, as did the previous editions, the former Pharmacopœias of London, Edinburgh, and Dublin. The fact that it offers a few alternative formulæ in certain preparations which may be made in or for India and the colonies cannot be regarded as rendering it Imperial or colonial, but the appendix which, it is understood, is to be published in about eighteen months or two years will doubtless render the work complete in this respect.

The work has already received some adverse criticism from Mr. Howard, Mr. Warington, Mr. Fletcher, Mr. Umney, Mr. Corder, Mr. Parry, Mr. Bryant, and others, and the points raised are well worth consideration, but probably when we become accustomed to the altered formulæ, &c., there will be reason to believe that it largely represents the advances which have been made in pharmacy since 1885; at least it should do so, seeing that it has taken about four and a half years to produce. To judge fairly of the work, it appears to me, we ought to know what was in the mind of the Medical Council when, in December, 1893, it was decided that a new edition of the Pharmacopœia was required. This we are to some extent able to do by reference to an article by Professor Leech in the *Medical Chronicle* of April last, where he writes as follows:—"The propriety of rendering it (the Pharmacopœia) more useful to the colonies and dependencies than it had hitherto been was generally acknowledged, but on other points very diverse views existed. Some, notably Sir Richard Quain, considered but little further change was needed than to add some of the approved new remedies and excise a few of those which had become less used. But the letters and articles which appeared in the medical papers as soon as it became known that a new Pharmacopœia was contemplated showed that there was a widespread feeling that something more was required. Those who were compelled to make the Pharmacopœia the basis for their teaching, the lecturers on materia medica at the various schools, were among the most adverse critics of the Pharmacopœia, and pointed out its shortcomings and many errors, and chemists, botanists, and pharmacists were no less insistent in calling for a thorough revision of all parts of the work. Eventually arrangements were made for such revision."

Here, then, we have the text for what has been attempted, and to the extent to which the work falls short of the object aimed at it is open to fair criticism. I will not enlarge on my oft-repeated objection to the constitution of the Pharmacopœia Committee; it is well known, and I trust in time it will be removed. I am quite aware that the Act of Parliament makes the Medical Council responsible for the publication of the work, but I have yet to learn that the committee appointed by that body may not consist partly of pharmacists. Without being tedious, let me give you an example of where, I think, the experience of practical pharmacists would have and may come in. Professor Leech tells us in the article quoted that the reason why saffron was retained in decoction of aloes although omitted from pulv. cretæ arom., pil. aloes et myrrhæ, and tr. rhei co. was that it improves its taste, and that a decoction prepared without it was not so pleasant as to take the place of that prepared with saffron. But it does not appear to have been taken into account that extract of Barbados aloes, which is more bitter and less aromatic, has been substituted for that of Socotrine, and what is well known to pharmacists—namely, that by keeping for some time, decoction of aloes loses much of its nauseous taste and mellows so as to become almost unobjectionable. It could only be on the homœopathic principle, "*similis similibus curantur*," that saffron could cure the nauseous taste of anything.

It is not my intention to deal with the criticisms which have been made, as doubtless you are all familiar with them, but I may point out a method of procedure with reference to the publication of the work which would have rendered most of them unnecessary, would have saved much inconvenience and uncertainty, and would probably have secured for it more complete observance than now exists. We are told that the proof was ready in February, and that no material alteration had since been made. Such being the case why should there have been so much mystery about the publication? Would it not have been better that proof copies should have been sent to the various medical and pharmaceutical journals under certain restrictions, perhaps, but with a view to publicly calling attention to the proposed alterations for the purpose of inviting criticism? Reasonable objections could then have been considered by the committee. The work could then have been issued at the end of May and gazetted (which legally constitutes publication) at the end of June. I am aware that the able editor of the Pharmacopœia kept a record of the various suggestions for improved processes, &c., which appear from time to time in the various journals, or were made at this Conference, and there is evidence that the *Year-books of Pharmacy* and the "Unofficial Formulæ" have been useful books for reference during the compilation of the official work. There are, however, those engaged in pharmacy who do not publish the many small matters which they observe and think about, but whose opinions on matters of detail would be valuable, and would be secured by dealing with the work in the manner I have suggested. Perhaps those in authority would consider that such a procedure would detract from the importance of the work, but Acts of Parliament are not framed and passed in secret, and are not made law before their provisions are known. I do not hold that in Germany they do everything better than we do in this country, but they are certainly in advance of us in their methods of producing a Pharmacopœia. In addition to having a properly constituted Pharmacopœia Committee, they publish from time to time (in fact, are now publishing in the *Archives der Pharmacie*) the suggestions which have been made and the alterations which are contemplated for a future edition of the work long before it is taken in hand for publication. In this way every detail is considered by all who are concerned and who are to be affected by its contents, so that when it assumes the position of legal authority all are fully prepared to obey its dictates, and it has the endorsement of the entire medical and pharmaceutical professions.

Mr. R. W. McKnight (Secretary). Mr. J. C. C. Payne (President.) Mr. W. J. Rankin (Secretary).

OFFICERS OF THE LOCAL EXECUTIVE COMMITTEE.

We shall all, I think, approve of the more general introduction of the metric system into the work, and there are many of the alterations which must commend themselves to us; but I will not anticipate the papers which are to be read at this meeting by entering into details, which will no doubt be ably dealt with by the gentlemen who have them in hand.

Our Hosts.

In view of these interesting papers I am anxious not to weary you with a long address, but I cannot close without referring to the fact that to-day we are the guests of a warm-hearted and generous people, who, like ourselves, are British, and whose interests are closely interwoven with—in short, are identical with—our own; that we are in a country at once beautiful and possessed of great natural resources, capable of much development—the lakes, glens, rocks, rivers, the wild romantic scenery, are all too well known to require comment; but the mineral wealth of Ireland is greater than most people suppose it to be: the coalfields of Leinster, Munster, Connaught, and Tyrone; the immense stores of red hæmatite bog-iron, and pyrites; the copper-mines of Wicklow, Waterford, and Cork; lead, rich in silver, native-silver, arsenic, antimony, baryta, magnesia, &c. To these may be added the gold found in Limerick and Tipperary, which, if energetically sought, may prove a veritable Klondyke nearer home. The fruitful soil, the climate rendered uniform and less severe than that of England or Scotland by the salutary influences of the Gulf Stream, tend to render the country one which will well repay the expenditure of capital in judicious enterprise. It seems probable that *Eucalyptus globulus* could be cultivated with advantage in the central plains of the island, and that its culture would improve the condition of the soil where excessive moisture exists. In suitable soil it is probable that the climate would be adapted to the cultivation of some herbaceous medicinal plants, such as peppermint, spearmint, &c. Some of the medicinal plants which we import from South America could, doubtless, be cultivated here with profit if the habitat were duly studied and a proper selection made. In Belfast we are in a veritable hive of commercial industry, and I know of no legitimate reason why large commercial centres of a similar character should not exist in other parts of this country of promise, so well situated and accessible to all parts of the world.

Michael Conroy.

It was my hope that I should have been able to conclude without having to record the death of any member of the Conference during the past year, but such is not my good fortune. Michael Conroy, a former Vice-President, an active member of the Conference, and an Irishman withal, has gone to his rest. He was only fifty-four years of age when he passed away, and we could have hoped to have had his active co-operation, his genial presence, and a continuation of his useful work for some years to come. He possessed a large amount of good reliable information on matters connected with our craft, and took an active part in the discussions at our meetings. He will be remembered by many here as Chairman of the smoking-concerts held as part of the social programme at our gatherings for many years, in which his cheerful, inspiring cordiality was always exhibited. The Executive Committee have already expressed, through the Honorary Secretaries their deep sympathy with his widow and family in their bereavement. Personally, I feel his loss to be that of a much-esteemed friend with whom I could always discuss matters relating to chemistry and pharmacy with pleasure and profit.

Dr. de Vry.

Since this address was written another eminent man has passed away. I refer to Dr. de Vry, of "The Hague." Just fifty-two years ago Dr. de Vry came to England as the representative of the Batavian Society of Experimental Philosophy of Rotterdam to attend a meeting of the British Association at Oxford, so that in those days he had attained to an eminent scientific position. During his long life his published works and communications amounted to over two hundred in number on various scientific subjects. He was the son of a pharmacist, and in his early life he followed that calling. His chief work which directly affected us was the investigation of the cinchona alkaloids and in connection with the cinchona-plantation of Java and India. He received recognition of his work from the Dutch and French Government, and was by our Queen made made a Companion of the Indian Empire.

Last year, as your President, I had the honour of joining the President of the Pharmaceutical Society, Mr. Carteighe, and the Presidents of the Chemical and Linnean Society in awarding Dr. de Vry the Hanbury gold medal. He was unable to be present, but he wrote that although 84 years of age all his senses and his intellectual faculties remained unimpaired. In 1871 he was elected an honorary member of the Conference, so that he has been connected with us for twenty-seven years. He was an excellent example of a man of high intellectual ability, devoting his powers to the purpose of serving his day and generation, passing away at a ripe age honoured and esteemed. Last evening your executive passed a resolution of condolence with his family, which I am sure you will endorse.

Vote of Thanks.

Sir **James Haslett**, M.P., in felicitous terms, moved a vote of thanks to Dr. Symes for his admirable and instructive address. In doing so, he expressed the gratification it was to them in Belfast to be honoured by having that Conference in their midst, and, as the Lord Mayor and Dr. Hamilton had said, they gave them all a cordial welcome. The address of their own President, to which they had attentively listened, was one of much interest, and the subjects with which he dealt with such simplicity, plainness, and care included a great many matters deserving their every consideration. Having referred to the warm relationship existing between the pharmacists of the three countries, and the desire that all qualified men should be found side by side, Sir James said that so far as they in Ireland were concerned they claimed to be equal to most men and superior to them all. (Laughter.) His friends, he hoped, would follow the example of some Scotch visitors and lose their return-tickets—(laughter)—for there was much in their country to interest them. (Hear, hear.) Some thought they came to spy out and see if they could start business, but there was no danger of that, because their Irish business was already so much cut up there was not the living there should be out of it. (Renewed laughter.) Sir James, continuing, briefly touched upon some of the leading points in the President's address. The President pointed out one or two difficulties in connection with the registering of a poison which suicides resorted to; but the difficulties of scheduling such a poison as carbolic acid would, no doubt, be overcome in time. With reference to the new regulations as to methylated spirit, he (Sir James) believed there were some people who used it as an intoxicant. He thought it would be wrong to put any restriction upon the use of it, as the man who wanted to drink a glass of it deserved to get it. (Laughter.) He thought the law should not interfere at all in the matter. (Renewed laughter.) Another point dealt with was the metrical system, which was really very desirable if they could change their forms of calculation and adopt the new system. Those wedded to the old form found that a hard matter; but their young men would find the metrical system one of simplicity, and its purity and form of calculation far in advance of the form now before them. Regarding the close connection between their pharmacists and medical men, as they all knew, one was essential to the other—the one prescribed, and the other carried out the work. He believed in what was said about the Pharmacopœia, but, in his opinion, the work was infinitely inferior to Whitla's edition. (Laughter.) His was not the dry reading, for it was a work worth having. He (Sir James) might tell them that when his premises in North Street were destroyed it was the only relic which could not be burned out. (Laughter.) They would find Whitla's book full of information, and he could cordially recommend it as a valuable adjunct to their library. He regretted, in common with the delegates, the absence of familiar faces, and shared the loss sustained by the removal of some by death. He had pleasure in moving that the best thanks of the Conference be accorded to the President for his valuable and instructive address. (Applause.)

Mr. **J. C. C. Payne**, J.P., formally seconded the vote of thanks, and

Mr. **S. P. Atkins** supported the motion with the greatest possible pleasure. They had had an excellent address, and they all remembered, he was sure, how in Glasgow last year Dr. Symes gave them a splendid *résumé* of the past work of the Conference. His address that morning was one full of practical importance, dealt with from practical and scientific knowledge of pharmacy, and from extensive observation on his own part. In the Council of London he was recognised as a typical pharmacist. Having alluded to the late George Frederick Schacht, whom they had with them in Dublin twenty years ago, and who had rendered splendid services, he would say they were grateful for the presence of the ladies. (Applause.) They all knew of the beauty of Irish women—(laughter and applause)—the eloquence of Irish statesmen, the bravery of Irish soldiers, and the hospitality of Irishmen which was known all over the world. (Loud applause.) He had pleasure in supporting and conveying the vote of thanks which was so much deserved.

The resolution was passed with enthusiasm.

The **President** said he was overwhelmed with their kind words, and he thanked them heartily for their cordial thanks.

At this point the Lord Mayor and Principal Hamilton retired, the audience upstanding.

Then Mr. **Payne** came forward to the rostrum to say that the President of the Ladies' Committee, Mrs. Clotworthy, had arranged for a visit to Messrs. Robinson & Cleaver's and Marcus Ward & Co.'s works, and carriages were in waiting for all ladies who would prefer to go there rather than to hear the papers. This was so popular that none but the sterner sex were left in the library, and the place looked dull in consequence.

Apologies

appropriately came in at this stage, Mr. T. B. Groves, Mr. F. B. Benger, Mr. N. H. Martin, Mr. C. Umney, Mr. R. Wright, Mr. Walter Hills, Mr. T. Tyrer, Mr. T. Maben, Mr. R. Reynolds, and Dr. J. Attfield being mentioned as amongst those who had written. Mr. Reynolds, as usual and as a Nestor, sent a few words of encouragement, and recognising the vigorous life of the Conference; while Dr. Attfield longed at a distance to hear the [B.P.] papers which so much interested him.

The **President** then announced that Professor J. P. Remington, of Philadelphia, had telegraphed his hearty congratulations. It is pleasant, said the President, to think that Professor Remington has remembered us, and sent us his congratulations at the moment of meeting. Those of us who were present at the Glasgow meeting will remember what an enthusiastic pharmacist he is, and how much he contributed to that meeting. (Hear, hear.)

Delegates.

Mr. **F. Ransom** (Hon. Sec.) read the following list of delegates to the meeting:—

Pharmaceutical Society of Great Britain.—Messrs. W. Hills (President), G. T. W. Newsholme (Vice-President), S. R. Atkins, T. Bateson, M. Carteighe, N. M. Grose, J. Johnston, W. Martindale, C. J. Park, C. Symes, W. Warren, J. Rymer Young, and R. Bremridge (Secretary).

North British Branch.—Messrs. J. Laidlaw Ewing (Chairman), W. L. Currie (Vice-Chairman), J. Bowman, G. Coull, A. Davidson, J. H. Fisher, G. Lunan, C. Kerr, D. McLaren, J. Moir, and J. Nesbit.

Pharmaceutical Society of Ireland.—Messrs. R. J. Downes (President), G. D. Beggs (Vice-President), J. E. Connor, H. Conyngham, P. Kelly, J. Montgomery, T. O. Sullivan, W. F. Wells, jun., Professor C. R C. Tichborne, and Dr. J. A. Walsh.

Brighton Association of Pharmacy.—Messrs. C. S. Ashton, H. A. Costerton, W. H. Gibson, W. W. Savage, S. G. Weston, and C. G. Yates.

Bristol Pharmaceutical Association.—Messrs. B. Keen and J. Pitman.

Cambridge Pharmaceutical Association.—Mr. E. Saville Peck.

Edinburgh Chemists', Assistants', and Apprentices' Association.—Messrs. G. Lunan and D. McLaren.

Forfarshire and District Chemists' Association.—Messrs. C

Kerr (President), A. B. Anderson, A. Davidson, David Ferrier, and A. Naysmith.

Glasgow and West of Scotland Pharmaceutical Association.—Messrs. W. L. Currie (President), R. McAdam (Vice-President), D. Watson (Hon. Sec.), R. Brodie, T. Dunlop, J. Foster, A. Fraser, John McMillan, R. McMurray, Riddell, Robertson, J. A. Russell, and Taylor.

Liverpool Chemists' Association.—Messrs. A. C. Abraham, J. Bain, E. Evans, jun., P. H. Marsden, T. H. Wardleworth, and W. Willings.

Manchester Pharmaceutical Association.—Messrs. Cooper, Johnstone, Kemp, Pidd, Wild, and Siebold.

Newcastle-on-Tyne and District Chemists' Association.—Messrs. T. Maltby Clague (President), G. F. Merson (Hon. Sec.), J. S. Dickson, G. Foggan, and L. Williamson.

Midland Pharmaceutical Association.—Messrs. J. Poole (President), R. Darton Gibbs, F. J. Gibson, C. F. Jarvis, and C. Thompson.

Leeds Chemists' Association.—Mr. F. W. Branson.

Ulster Pharmaceutical Association.—Mr. J. Tate (President), Dr. Fielden, Dr. Tweedie, Messrs. Connor, Guiler, Montgomery, Elliott, Moffitt, McKnight, and Payne.

Oxford and District Chemists' Association.—Mr. G. Claridge Druce.

North-East Lancashire Chemists' Association.—Councillor Shorrock and Mr. Holt.

Plymouth, Devonport, and Stonehouse Chemists' Association.—Messrs. C. J. Park and Turney.

Exeter Chemists' Association.—Mr. H. Wippell Gadd.

Mr. W. A. H. NAYLOR (senior Hon. Secretary) read the following

REPORT OF THE EXECUTIVE COMMITTEE.

During the past year your committee has met on several occasions to transact the business of the Conference, and to take into consideration matters affecting its interests.

Since the last annual meeting 65 candidates have been elected to membership, 20 members have resigned, and 24 have been removed by death. An accession to our ranks is still much needed, and your committee would again impress upon all members the necessity of personal effort in this direction.

Dr. G. N. Kernot having resigned his position as Honorary Colonial Secretary for the Presidency of Bengal Mr. J. G. Prebble was appointed to succeed him, and Mr. J. Stanley Smith has been elected to the same position in the Presidency of Bombay in succession to the late Mr. E. Beynon.

Mr. Louis Siebold, F.I.C., F.C.S., has again been appointed editor of the *Year-book*, and the MS. of Parts 1 to 3 of the forthcoming volume is already in the hands of the printers.

The Blue List has been subjected to revision by a sub-committee appointed for the purpose; several subjects have been omitted, while others which appear to deserve investigation have been added.

A grant of 5*l.* in aid of research has been made to Mr. E. J. Parry, B.Sc., F.I.C., to defray expenses in connection with the further investigation of sandalwood oil.

Your Committee announces with regret that Mr. John Moss, F.I.C., F.C.S., owing to increased engagements, has asked to be relieved of the office of Treasurer, and his duties as such will terminate after this meeting. Your committee has expressed to Mr. Moss its most cordial thanks for the valuable service he has rendered the Conference during the past five years.

The Conference has lost by death during the past year a distinguished honorary member, Professor Dragendorff, of Rostock, a chemist who, both as author and as professor at the University of Dorpat, has contributed much to the promotion of pharmaceutical research. By the death of Mr. Michael Conroy, F.C.S., who was a Vice-President at the Liverpool meeting in 1896, the Conference has lost one of its most able and frequent contributors. His ability and practical experience in technical pharmacy were evidenced in the papers which he contributed and in the part he took in the discussions, while his genial nature brought him into equal prominence in the social functions of our meetings. Amongst others who have passed away reference must be made to Mr. E. Beynon, whose death followed shortly after his resignation already referred to; Mr. Thomas Glaisyer, who acted as Honorary Local Secretary at the meeting of the Conference in Brighton; and Mr. W. Willmott, who has contributed several papers of interest.

At the moment of completing this report there comes the sad intelligence of the death of J. E. De Vry, Ph.D., C.I.E., at the advanced age of 85. As a quinologist he had attained a reputation which gave him rank amongst the greatest authorities in this branch of knowledge. He was also early distinguished as a pharmacist, and later as a naturalist. For twenty-seven years he has been an honorary member of the Conference, and in the *Year-book of Pharmacy* are to be found references to twenty-five of his many papers on cinchona-bark or its alkaloids. Your Committee desires to pay its tribute of grateful acknowledgment to the memory of him who, by his invaluable researches, has greatly enriched our knowledge of a most important drug.

The loss which has annually to be recorded of so many of our active members should stimulate all those who remain to increased energy, and your Committee trusts that the disinterested loyalty which so characterised the founders and early supporters of the Conference may continue to inspire those upon whom the duty devolves to maintain the success of the Association.

Mr. JOHN MOSS (Hon. Treasurer) then submitted his

FINANCIAL STATEMENT,

of which the following is a summary:—

The year began (July 1, 1897) with 52*l.* 16*s.* 4*d.* in hand, and there was received 382*l.* 3*s.* 10*d.* from subscriptions, 82*l.* 18*s.* 5*d.* from *Year-book* advertisements, and 16*l.* from sales, besides 1*l.* 14*s.* 6½*d.* from other publications. Altogether 574*l.* 8*s.* 1½*d.* figured on the debit side. On the other there were 391*l.* 4*s.* 3*d.* for expenses in connection with the *Year-book*, including 150*l.* Editor's salary; 55*l* for salary and rent to the Assistant Secretary, with 11*l.* 1*s.* 6*d.* for sundry expenses; 5*l.* 15*s.* 9*d.* for the Blue-list; various postages, 19*l.* 12*s.* 10*d.*; printing and stationery, 12*l* 5*s.* 3*d.*, and other small items, the cash in hand amounting to 35*l.* 11*s.* 8*d.*

There is 300*l.* invested in 2¾ per cents. as the Bell and Hills Fund, which yielded 9*l.* 11*s.* 8*d.* of dividends last year. Books for Glasgow cost 9*l.* 0*s.* 9*d.*, and there is a cash balance at the bank of 18*l.* 5*s.* 9*d.*

Mr. G. CLARIDGE DRUCE moved the adoption of these reports, and Mr. F. W. BRANSON having seconded, they received the approval of the meeting.

Mr. W. MARTINDALE, Chairman of the

UNOFFICIAL FORMULARY COMMITTEE,

read the following report from that body:—

"In presenting their report the Unofficial Formulary Committee have to inform the Conference that, as some of their members were engaged in assisting the General Medical Council in the revision of the British Pharmacopœia during the last three years, it was considered advisable that the Formulary work should be in abeyance until the new Pharmacopœia was published. They have much pleasure in reporting that the official Pharmacopœia has absorbed eighteen formulæ that were devised by the Unofficial Formulary Committee (some with slight modification). The Committee should now resume active work, and would suggest their reappointment."

Mr. MARTINDALE added that the question of the reappointment would come on at a later stage of the meeting.

This report was adopted on the motion of Mr. H. COLLIER, seconded by Mr. SAVILLE PECK.

11.45. The way was now clear for the following part of the programme:—

PAPERS.

1. "Kieselguhr," by John Moss, F.I.C., F.C.S.
2. "Note on Oil of Eucalyptus," by E. J. Parry, B.Sc., F.I.C.
3. "Gluten Flour and its Analysis," by Victor G. L. Fielden, M.B., L.P.S.I.
4. "Green Extracts of the Pharmacopœia," by W. A. H. Naylor, F.I.C., F.C.S., and John J. Bryant.
5. "The Commercial Varieties of Dill and their Essential Oils," by John Umney, Ph.C., F.C.S.
6. "A New Constituent of Oil of Lemon," by John C. Umney, Ph.C., F.C.S., and R. S. Swinton.
7. "A Quick Polarimetric Method for the Estimation of Strophanthin in the B.P. Tincture and Extract," by Edward Dowzard, F.C.S.
8. "Notes on Concentrated Oil of Lemon," by T. H. W. Idris, F.C.S.
9. "Note on Extract of Ginger," by T. H. W. Idris, F.C.S.
10. "The Salient Features of the Irish Flora," by G. C. Druce, M.A., F.L.S.
11. "Materia Medica Animals," by J. C. McWalter, L.R.C.S.I. L.A.H.I., M.P.S.I.
12. "The Amount of Carbonic Anhydride available in the Official Granular Effervescent Preparations," by C. S. Dyer, A.P.S.
13. "Albumen and Some Types of Proteid Digestion," by Gordon Sharpe, M.D.

To these were added, after No. 3, a communication by Mr. E. C. C. Stanford on "Thyroglandin."

The first paper was then taken, viz.:—

Kieselguhr and Other Infusorial Earths.

By John Moss, F.I.C., F.C.S.

This paper aims at collecting short notes on the infusorial earths which have come into use with pharmacists, the various kinds, and the various uses to which these earths are put, and to indicate particular applications to which they can be put.

Kieselguhr is an infusorial earth found in Hanover. The deposit is 150 feet thick; the upper stratum (50 to 100 feet) is nearly white, the lower one greyer and with more organic matter. The facts suggest that a process of oxidation goes on in the upper stratum which changes the nature of the organic matter, rendering it more soluble and less coloured, and capable of being washed downwards to layers less charged with air, and consequently less able to assist the change. Organic matter and colour are got rid of by calcining in small furnaces, which are filled with kieselguhr and then lighted at the bottom. The organic matter suffices to keep the whole in a glow, the process being made continuous by raking out below and supplying fresh material at the top. The calcined product consists of silica more or less coloured with ferric oxide. Beckerhinn found 95 per cent. of SiO_2 and a specific heat of ·2089. The strongest acids have no effect on it, but with alkalies it fuses easily, forming a variety of soluble glass.

In France there occurs a similar siliceous earth called randanite (from Randan, in the Puy-de-Dôme), and there are other deposits near Aberdeen, in the Island of Mull, at South Mourne in Ireland, in Wales, in Norway, in Virginia, in the Bermudas, in Australia, and in many other parts of the earth.

Infusorial earth consists of the siliceous envelope of diatomaceæ. The diatoms, as they are called, are of great beauty microscopically on account of their perfect symmetry. From the origin of these deposits, diatomite would be an appropriate name. Some of the deposits the author has examined microscopically, and has detected the following more important individuals:—

1. In kieselguhr — *Surirella*, *Gaillonella*, *Diadesmis*, *Pleurosignia*, *Synedia*, *Stephanodiscus*, *Spongolithis*, *Amphora*, *Melosira*, and *Navicula*.

2. In Scotch deposits—*Diatoma*, *Cymatopleura*, *Synedra*, *Gomphonema*, *Cocconema*, *Surirella*, *Primularia*, and *Rhabdonema*.

3. In the Virginian deposit (which extends under the whole of the city of Richmond, and is of a compact nature, capable of being carved into small objects)—*Coscinodiscus*, *Dictyolampa*, *Rhabdonema*, and *Triceratum*.

4. The Australian deposit, according to Sir J. D. Hooker, consists chiefly of the siliceous loricæ of diatomaceæ. (This deposit is not less than 400 miles long and 120 miles broad.)

5. The Scandinavian deposit, known locally as *bergmehl*, or mountain flour, contains sufficient organic matter to permit it in times of scarcity being mixed with dough in making bread. The author has not had an opportunity of examining a sample of this.

6. An Australian kind, probably from the Australian deposit referred to above, in the form of a white fluffy powder, consists almost entirely of the loricæ of *Tetracyclus*.

An examination of eight different specimens of infusorial earth shows that the silica (SiO_2) in no case exceeds 96 per cent., and in some falls to 70 per cent., the differences being made up of moisture (varying from 2·6 to 7·8 per cent.), organic matter (2·43 to 23·6), ferric oxide, and alumina.

Uses of Diatomite.—Since 1866 it has been largely used in the manufacture of dynamite, on account of its great absorbing property. It will absorb three times its own weight of nitro-glycerin, and can then be pressed into blocks. It is also used for making so-called "dry sulphuric acid." One part of diatomite with 3 or 4 parts of oil of vitriol can be made into a mobile powder, and packed in drums for export. As a basis for disinfecting-powder there is much demand for diatomite. A powder is charged with 10 or 20 per cent. of carbolic acid, and is much lighter in bulk than powders with a chalky basis. In making plate-powders diatomite is in important demand; for this purpose it is of course freed from grit.

The author has used diatomite mixed with silicate of soda and fibrous material as a coating for boilers, steam pipes and pans, to prevent loss of heat by radiation. Safe-makers use diatomite on account of its non-conductivity of heat in the construction of fireproof chambers. This same property makes it also valuable in constructing ice-chambers. Diatomite is said to be used in soap-making, and is used in the manufacture of ultramarine and artificial meerschaum. It also effectually deadens sound-waves, and thus finds uses in the construction of soundproof rooms. For use in pharmacy, as a filtering-medium, it must be free from organic matter and grit, and is preferable to the powders at present in common use (chalk, magnesia, phosphate and sulphate of lime, talc, and asbestos). Diatomite does not clog up the filtering-bag like talc or asbestos. To mix the powder with the liquid, it should be worked up in a mortar with a little of the liquid, and not added by dusting it into the bulk of the liquid.

For making dentifrices diatomite should be as white as possible, and free from grit and organic matter. If diatomite is considered too light in bulk some chalk may be retained in the dentifrice with benefit. The following are suggested formulas for dentifrices:—

Diatomite Tooth-powder.

Diatomite	1 oz.
Cretæ præcip.	1 oz.
Pulv. sapo alb.	1 oz.
Otto rosæ	♏ij.
Ol. caryoph.	♏j.
Ess. m. pip.	♏v.
Sacch. lact.	ʒj.

M.S.A.

Diatomite Tooth-paste.

Diatomite	1½ oz.
Alum. ust.	½ oz.
Pulv. myrrhæ	¼ oz.
Ol. caryoph.	♏vj.
Glycerin.	½ oz.
Ext. cocci liq.	q.s.

M.S.A.

Dusting-powders.—By virtue of the enormous and unequalled absorbent property of diatomite it is unrivalled as a dusting-powder basis. Smoothness is imparted by the addition of boracic acid in fine powder. Oxide of zinc, kaolin, talc, or fullers' earth may be added if required, as well as antiseptics.

Diluent for Hygroscopic Powders.—This last suggestion the author made he said was open to debate. The case of euonymin, for instance, when made by the Pharmacopœia process, presents difficulties which vary with different batches of the drug. Diatomite is inert and insoluble, and cannot react on the drug as chemical powders, such as magnesia, may, is more easily powdered than sugar of milk, and the mixture remains pulverulent. The question naturally arises as to the advisability of introducing silica into the stomach. It can be at most only a few grains, which is deprived of its significance when it is remembered that in times of scarcity it has been used by Norwegian peasants in bread, and pounds eaten in a week. Whole-meal bread is recommended and largely used for the wholesome action of the siliceous particles (much coarser than diatomite) in the grain-husk on the intestinal canal, so that it would seem as if only beneficial effects would follow the administration of a few grains in a dose of euonymin. The binding-power of diatomite under pressure suggests its use in tablet-making for drugs which compress with difficulty.

During the reading of the paper specimens of various kinds of diatomite were passed round.

Discussion.

12.4. The President thought the paper was very practical and suggestive, and would give them all something to think about. He noticed Mr. Moss spoke of the diatom as a vegetable. He (the President) remembered that in his boyhood's days it was regarded as an animal. He remembered the difficulty they experienced in getting specimens for the microscope; how they repeatedly boiled them in acids to get rid of organic matter, but finally produced a most enchanting object for examination. Judging from the way the diatoms survived their treatment with acids, he could quite understand that this substance was quite inert in the system.

Mr. E. C. C. Stanford (Dalmuir) asked if Mr. Moss had had any experience with kieselguhr as a filtering-medium for ridding liquids of bacteria. One filter he knew was recommended as having this property, due, he supposed, to the diatoms being small enough to prevent the passage of bacteria.

Mr. F. Ransom (Hitchin) said his experience with diatomite as a filtering-medium was that the darker kinds were more efficacious than the lighter varieties. Probably this was due to the diatoms of the whiter variety being smaller. He found that the size varied much under the microscope. In regard to the mention of diatoms being animal, he thought that there was no doubt now that they were vegetable—they were classed under Algæ.

Mr. W. Martindale (London) said he did not regard diatomite as an ideal dusting-powder, owing to its harsh and sticky nature. Kaolin or talc he had found preferable, on account of their unctuous nature. It was true that diatomite had greater absorbent power, but in the chafing of stout people the chance of friction would be increased.

Mr. Moss, in replying, said he had found diatomite efficacious for freeing galenical preparations from bacteria. His experience agreed with Mr. Ransom's that the darker kinds of diatomite had superior filtering-power to the lighter kinds, due to the difference in the size of the diatoms. He did not think the characters could be described as harsh and sticky—felty was a better description—and then the particles were very small. A little diatomite mixed with fullers' earth improves its absorbent properties without interfering with its antifrictional properties.

12.12. A vote of thanks having been accorded to Mr. Moss, the next paper was taken, viz.:—

Note on Eucalyptus Oil.

By E. J. Parry, B.Sc., F.I.C.

There are some fifty or more species of *Eucalyptus* peculiar to Western Australia. During a visit to the eucalyptus districts the intense and not altogether pleasant odour of the broken leaves of some of these Western Australian eucalyptus was very noticeable. An examination made of about 60 or 70 c.c. of oil from the leaves of *Eucalyptus loxophleba*, is the subject of the present note.

The tree is known as the York gum, and grows chiefly in companionship with *Eucalyptus redunca* (the wandoo), but only on the eastern slopes of the Darling range. It is common enough all through the forest districts between Albany and Perth, especially in the neighbourhood of Beverley and Pingelly. It forms a fine straight tree of 70 to 100 feet in height, but with a diameter at the base which seldom exceeds 3 feet. The bark is rough and dark-coloured, and the leaves have a peculiar oblique venation. It grows on any soil, and its wood, being very hard, finds employment in various ways, especially for wheelwrights' work. The aborigines value the wood very much, as it is the finest they can find for making spears with.

The oil has a most obnoxious and irritating odour, inducing violent coughing when inhaled. Its sp. gr. at $\frac{15\ 5^\circ}{15\ 5^\circ}$ is 8 828. It is faintly dextrorotatory, about ·5° in 100-mm. tube. On fractionation it yielded the following results. It began to boil at 160°, rising rapidly to 168°. The fractions collected were:—

168°–171°	... ...	68 per cent.
171°–176°	... ...	14 „
176°–182°	... ...	8 „
182°–187°	... ...	2 „
Residue	... ...	8 „

With phosphoric acid the oil simply became syrupy. The first fraction of 68 per cent. was almost free from cineol, whereas the 8 per cent. distilling between 176°–182° was almost entirely cineol. An estimation of this body in the fractions, which was necessarily only approximate, showed that the oil contains about 15 per cent. Whilst phellandrene was present, as identified by its nitrite, it did not form anything like the remainder of the oil, and the small quantity available prevented the search for any other bodies, with the exception of aldehydes or ketones, of which an absorption of about 10 per cent. by sodium bisulphite suggests the presence; and for amyl alcohol, which has been found in traces in the oil of *Eucalyptus globulus*. It was not, however, present in this oil.

Saving the Chairman's brief remarks there were no comments upon this paper; therefore the next one was
12.16. promptly taken, and was read by the author.

Gluten Flour.

By Victor G. L. Fielden, M.B., &c.

This investigation was suggested to the author by Dr Whitla, who had his suspicions about a sample of gluten flour which a diabetic patient of his was using. Gluten flour is used as a substitute for ordinary flour in making bread, &c., for diabetic persons with the object of reducing the starchy food taken and subsequent production of sugar to a minimum. Gluten is the most nutritious part of wheat-flour, and in nourishing power is equal to fresh meat, but its preparations are not so palatable as those of ordinary wheat-flour. The best qualities of wheat contain from 10 per cent. to 15 per cent.; inferior kinds, 8 to 9 per cent. Gluten consists of three substances closely allied to each other—vegetable fibrin, mucin, and gluten or gliadin. There are two processes for the manufacture of gluten—one the "sour process," in which the starch granules are freed by a process of fermentation, and the other, which consists in treating the material with dilute solution of caustic soda, which dissolves in part the gluten, setting the starch granules free. The latter process yields the maximum of gluten, as the undissolved portion is separated from the starch by sieves, and the dissolved portion by the addition of acid. The author obtained five samples of flour from different sources and estimated the gluten and starch together with the sugar. To estimate the gluten the author washed 10 grammes thoroughly in a bag of close muslin in a stream of water until a small quantity of the washings when boiled gave no blue colour with tincture of iodine. The plastic mass was then dried in a tared dish in a water-oven till it ceased to lose weight, when it was weighed and the percentage calculated. The starch was estimated by converting it into sugar by boiling 2 grammes of the flour with 20 c.c. of sulphuric acid and 200 c.c. of water for three or four hours (any sugar naturally occurring in the flour was consequently estimated at the same time). After boiling, the liquid was neutralised with caustic soda and made up to a known bulk with water, and the amount of glucose estimated by Fehling's solution; ·05 gramme of glucose being equivalent to ·045 gramme of starch, a simple calculation gave the percentage of starch in the gluten flour. The following are the figures obtained from the five samples examined:—

—	A	B	C	D	E
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Gluten ...	76	60	65	8·5	66
Starch and sugar ...	7·6	16·7	13·26	68·8	11·63

The sample D is sold as crude gluten; a diabetic patient would gain nothing by using such a sample. The process of determining the proportion of gluten being such a simple matter, the author suggests that all chemists who sell this article should occasionally test their stock, as the question of a good and reliable gluten flour is of primary importance to a diabetic patient.

After the paper was written the author observed in the *B.M.J.* of July 16 a paper on "The Chemistry of Diabetic Foods," in which Dr. F. Kraus, jun., of Carlsbad, exposes the unreliability of the general run of commercial diabetic bread in Germany, and says that he could produce parallel examples of English diabetic bread and flour in every respect as bad.

Discussion.

12 30. The President thought they would all much appreciate the paper. So much depends on good diabetic preparations, that the matter was of growing importance to pharmacists. He remembered some years ago, Dr.

Pavy had samples of gluten bread examined, he (Dr. Pavy) thought that gluten bread should contain 75 per cent. of gluten. The President said he would like to point out the importance of the matter as people were making themselves believe they were taking gluten when often starchy matter was present in as large a proportion as 50 or 60 per cent.

Mr. **Collier** said he belonged to the hospital with which Dr. Pavy was associated, and the conclusion he had arrived at was that it was impossible to get gluten bread without starch. That it cannot be obtained free from starch he attributed to the method of preparation—a mechanical process of washing out the starch. He would like to know if the author had had any experience in the method of preparing starch-free bread with diastase. A sample of French gluten bread, which had been highly recommended, he had examined, and found it to contain a large proportion of starch—from 30 to 40 per cent.

Dr. **Paul** confirmed these remarks. He had found a large proportion of starch invariably present in so-called diabetic foods. Some two or three years ago he examined many samples for the late editor of the *British Medical Journal*, and there was scarcely one that did not contain a large proportion. He thought most of the gluten breads were delusive foods.

Mr. W. **Martindale** said he had been told by a large dealer that it was not possible to get gluten bread free from starch. He was told that scarcely any of the flour was English made; it was mostly Swiss or French make. In regard to the palatability of the bread, he himself would prefer bran or almond biscuits, which, he thought, made useful articles of diet in diabetic cases.

Mr. S. R. **Atkins** (Salisbury) said it was sometimes said that we make very important and disastrous revelations at our meetings, but we must, of course, face the facts. He was amazed at the results shown by this paper—it was an eye-opener. It seemed rather a cruel business which was being unconciously pursued. Gluten bread was a most obnoxious form of bread, and as patients ate it by the doctors' orders, they ought surely to have some great benefit for their disagreeable meal. He thought there should surely be some means of preparing an honest article, and hoped the paper would have some practical results.

Mr. W. A. H. **Naylor** said gluten bread was very difficult to manipulate, and that accounted for the large proportion of starch present.

Dr. **Fielden** thanked the Conference for the way the paper was received, and, in reply to Mr. Collier, said he had had no experience with the diastase method of preparing gluten bread. His experience had been confined to the flour. Every speaker had commented on the fact that it was not possible to get samples free from starch. His object had been to get to know the proportion present and the relative values. The samples had been obtained from entirely different sources, but he could not identify them now. Almond and bran meal was an excellent substitute for gluten flour, but it was out of the scope of this paper. Like Mr. Atkins, he had been amazed at the amount of starch he found in the flours.

The **President** said in regard to the taste of the food, some thought it very disagreeable and others did not object to it; anyhow, it was a food which wanted a good deal of eating.

A paper was then read on

THYROGLANDIN,

By E. C. C. Stanford.

There is a pretty general opinion amongst medical practitioners that the various known preparations obtained from the thyroid gland of the sheep leave something to be desired in uniformity and efficiency. The fact that the new British Pharmacopœia has two preparations of it—thyroideum siccum and liquor thyroidei—a glycerin extract. There are a number of other preparations in the market, the most important of which is thyroiodin, discovered by Baumann. Probably the most efficient, as well as the most largely used, is the dried gland. The objection to the use of this form is that it is just as dangerous as the raw gland, in that it may introduce into the system bacteria or other matters of foreign origin. The objection to the glycerin extract is that it does not dissolve out the thyroiodin; and the objection to the use of the thyroiodin alone is that, although perhaps the most active principle, it does not represent all the active constituents of the gland. Thyroiodin is obtained in destroying the greater part of the gland by boiling for thirty hours in 10-per-cent. sulphuric acid (Bayer's patent, No. 12,295, 1895), or by boiling it in 3-per-cent. caustic soda, and precipitating (Bayer's patent, 20,827, 1895) by an acid the thyroiodin, or by digesting the gland out with pepsin, or by heating it in a close vessel at 180° C. with water (Bayer's patent, 9,576, 1896). In each case the gland is destroyed, and the thyroiodin only extracted. The thyroiodin is a stable compound, and not easily decomposed. It exists in small proportion, about 1 in 333, or $\frac{3}{1000}$ according to Bayer. The thyroid gland contains two important principles, each containing iodine, iodo-globulin and thyroiodin. The iodo-globulin in all the above methods is destroyed. It can easily be extracted by cold water, and this solution can be evaporated at 212° F. without in any way impairing its activity. This substance amounts to about 17 per cent. of the raw gland, and is quite active alone. The thyroiodin, which is more active, but existing in smaller quantity, can then be extracted from the residual gland after maceration in cold water by boiling it with weak caustic-soda solution for an hour, and precipitating by an acid. The author's process is as follows:—

> The thyroid glands, freed from fat and minced, are first macerated in four to five times their weight of cold water, using ice if necessary in summer to keep down the temperature to 50° F., for twenty-four hours, and this maceration is repeated. The solutions are filtered off and evaporated to dryness at a temperature not exceeding 212° F. The extract is powdered, and represents the iodo-globulin, and a small proportion of saline matter. The residue from the cold-water maceration is boiled for one hour with a 1-per-cent. solution of caustic soda, in the proportion of 1 per cent. of caustic soda to the original gland. The solution is allowed to cool to deposit the fat, and filtered off. This solution is then carefully neutralised with hydrochloric acid and evaporated to dryness at 212° F.; the residue, which contains all the thyroiodin, is then powdered and mixed with the iodo-globulin obtained in the first process. The resulting powder is the new preparation to which the name of "thyroglandin" has been given. The last evaporate may be digested with petroleum spirit to remove traces of fat, but in all ordinary cases the amount is so small that this is unnecessary.

The yield of "thyroglandin" is about 25 per cent. The gland yields 29 to 30 per cent. of dry matter, so that the dose is rather less than that given in the B.P., which is 3 to 10 gr. The weight of the thyroid gland varies from 24·2 gr. to 136 gr., but the most usual weight is 33·3 gr., or about three glands to 100 gr., so that 8·6 gr. "thyroglandin" = 1 gland. The dose, therefore, if half a gland is taken, is 4·3 gr. By one gland Mr. Stanford meant one lobe, of which there are two in the animal. This preparation really represents the activity of the raw gland, without its disadvantages and dangers, and contains the active principles in the form and proportion in which these exist in the raw gland. Considering the raw material used, this preparation is remarkably uniform. This is proved by the cases given by Dr. McLellan, of Glasgow University, in the *British Medical Journal*, July 9, 1898, and by several other observers whose reports have not yet been published. No unpleasant symptoms were observed in any of the patients who took this preparation. An outline of the process was given in Dr. McLellan's paper, and it has been criticised in the *British Medical Journal*, July 16, 1898, by Dr. Hutchison, who naturally prefers a process of his own. This consists in macerating the glands in cold 1-per-cent. caustic-soda solution and precipitating the colloids by acetic acid. This would be a convenient method if it were effectual. But the caustic soda in the cold does not dissolve out the thyroiodin, for on boiling the residue with 10 per cent. sulphuric acid much thyroiodin can be extracted. Then the iodo-globulin, which is easily extracted by cold water, is altered by caustic soda, so that the colloid precipitated by acetic acid is not the same as the iodo-globulin dissolved, as might be expected with such an easily altered body. The precipitation is not complete, for the acetic-acid mother liquor, if neutralised and evaporated down, still contains a considerable proportion of the iodine.

Mr. Stanford's results in this process gave precipitated colloids 6·67 per cent., thyroiodin in residue (15·25 per cent., and very hygroscopic) extracted by boiling in 10 per cent sulphuric acid. In another German patent the glands are extracted by a $\frac{3}{4}$-per-cent. solution of sodium chloride and the solution precipitated by tannic acid, but here a foreign body is introduced into the colloid. The precipitation is not complete: the mother liquor contains iodine and the residual gland thyroiodin.

Discussion.

The **President** thought this was a paper which conveyed much information in a small space. He knew that Mr. Stanford, was working on this subject, as last year at Glasgow he had an opportunity of seeing specimens. The difficulties had been overcome, and the author had at last succeeded in making a very excellent preparation.

Dr. **J. C. McWalter** said he hesitated to rise and question Mr. Stanford, as he was such a great authority. He would like to say that the preparations of thyroid glands had long been a reproach to pharmacy, as they do not represent the active principles of the gland. He thought Mr. Stanford, in his process, had not put enough emphasis on the necessity of using the glands while still warm from the animal. The time which elapsed after removal from the animal should not exceed thirty minutes. Mr. Stanford said that glycerin does not dissolve the thyroid principles, from which opinion he begged to differ. Dr. Murray, of Newcastle, who was an authority on thyroid preparations, and who previously preferred only the dry preparations, was a convert to the glycerin method, and he understood that the B.P. formula was Dr. Murray's own.

Mr. **Louis Siebold** asked in what proportions the different constituents occurred, and what difference the author had found in the proportions of iodine present

Mr. **W. Martindale** would like to ask if it could be clearly proven that the activity of these preparations was due to the iodine compounds; if so, this way of getting iodine was rather costly. The glycerin extract did not keep to any great extent, and the dried preparations seem to be preferred in England, and they were undoubtedly successful. He had found the B P. liquor thyroidei keep well. The glands were apt to undergo decomposition, and many specimens of the powdered or compressed form smelt very unpleasantly and caused trouble with fastidious patients.

Mr. **P. Kelly** thought it was important to prevent *post-mortem* changes in the glands. Instead of thyroid, the patient might be swallowing ptomaines. He asked if a test could not be devised to show when ptomaines were present.

Mr. **A. Ball** asked what was the difference between the products of Dr. Hutchinson's and Dr. McLennan's process.

Mr. **Stanford**, in reply, said thyroglandin did not represent the gland, as they were not all exhausted. Anyone who has attempted to read the literature on the subject would know that doctors differ very much as to what the active principles were. He (Mr. Stanford) only claimed for his process that it was the first successful attempt to get a chemical product from the glands without having decomposing matter in it; all other preparations were liable to contain organic matter. The glycerin preparations most complained of were those which give the most disagreeable symptoms.

1.6 P.M. Mr. **Naylor** next gave the gist of the following paper:—

A Quick Polarimetric Method for the Estimation of Strophanthin in the B.P. Tincture and Extract.

By Edwin Dowzard, F.C.S.

The following method will be found useful as a means of approximately estimating the amount of strophanthin in the B.P. tincture and extract.

One hundred cubic centimetres of tincture is evaporated down to about 20 c.c. on a water-bath; 2 c.c. of a solution of basic acetate of lead is then added, the mixture heated for a few minutes, and filtered, the precipitate being washed twice with warm water. The filtrate and washings are evaporated to about 10 c.c., and made up to exactly 20 c.c. with water, a portion of which is passed through a dry filter.

The optical rotation of the filtrate is then taken in a 200-mm. tube, using an instrument of the Laurent half-shadow type.

One minute is equivalent to ·03 gramme strophanthin per 100 c.c. of the liquid examined.

Example:—

One hundred cubic centimetres of the 1885 tincture was treated as above; rotation = +0° 30′.

$\therefore \quad \frac{\cdot 03 \times 30}{5} = 0{\cdot}18$ gramme strophanthin in 100 c.c. tincture.

It is necessary, of course, to divide the rotation by 5, as the liquid is five times stronger than the original tincture.

In the case of the extract the estimation must be made before the reduction with milk sugar.

One gramme of extract is dissolved in 5 c.c. warm water; 2 c.c. solution of basic acetate of lead is then added, the mixture heated for a few minutes, and filtered. The precipitate is washed with warm water until the filtrate and washings measure 20 c.c. The rotation is then observed, and the amount of strophanthin calculated therefrom as in the tincture.

The **President** said this was a very interesting as well as short paper, the method of examination being one which could no doubt be applied to other things, as the polarimeter gave its indications rapidly. He hoped the matter would be followed up.

The Conference adjourned for luncheon.

SECOND SESSION, TUESDAY AFTERNOON.

Although the President had impressed upon the members the importance of getting back to the library by 2 o'clock, it was 2 50 before a sufficient number could be got together to resume the proceedings.

Mr. **Naylor** read the following in abstract:—

The Green Extracts of the Pharmacopœia.

By W. A. H. Naylor, F.I.C., and John J. Bryant.

This paper is an attempt to answer question 48 of the Conference blue-list as to a simple process of assay and definite proposals for standard strengths of extracts of belladonna, henbane, and stramonium. The authors have not been able to obtain samples of ext. stramonii made from the juice of the plant. Their investigations are therefore confined to green extract of belladonna and extract of henbane. The process adopted for assaying belladonna extract was as follows:—

From 2 to 5 grammes of the extract are weighed into a wide-mouth flask, 25 c.c. of 90-per-cent. alcohol added, and the flask, with its contents, heated on a water-bath under an inverted condenser or other arrangement for preventing loss of alcohol and providing facilities for exhaustion. This operation is twice repeated with two more quantities of 25 c.c. of 90-per-cent. alcohol. After each operation the alcoholic solution in the flask is allowed to become cold and filtered, and the filtrates mixed. To make sure that extraction of the alkaloidal content is complete the residue in the flask is warmed with a 5-per-cent. solution of hydrochloric acid and filtered. The filtrate is then tested with solution of iodine in potassium iodide. Three extractions with alcohol are found sufficient for the purpose.

To the alcoholic-alkaloid solution an equal volume (75 c.c.) of a 5-per-cent. solution of the hydrochloric acid is added, and the mixture shaken up three times successively with 15 c.c. of chloroform. After separation and rejection of the chloroformic liquids, the acid solution is rendered distinctly alkaline by the addition of ammonia, and again shaken up three times with 10 c.c. of chloroform. The chloroformic solutions after withdrawal are mixed and evaporated, and the residue dried over a water-bath until it ceases to lose weight. The dry alkaloidal residue is titrated as the Pharmacopœia directs in the final stage of the process for determining the proportions of alkaloid as given under ext. belladonnæ liq.

The difference between the amount of alkaloid obtained by weighing and that indicated by subsequent titration is less than 0 01 gramme.

The following table gives the comparative results obtained by weighing and titration, and shows by difference the amount of impurity in the alkaloidal residue. Two estimations of each sample are given. In the table are included the published analysis by John Barclay, B.Sc., of the green extracts of belladonna met with in commerce, and also those given in Squire's "Companion" (1894):—

Green Extract of Belladonna.

No.	Per cent. of Alkaloid found by Weighing	Per cent. of Alkaloid found by Titration	Barclay's Per cent. of Alkaloid by Weighing	Barclay's Per cent. of Alkaloid by Titrating	Squire's "Companion"	
1 ...	1·637	1·487	1·32	1·24	0·94	(1885)
	1·719	1·481	1·37	1·14	—	
2 ...	1·698	1·576	1·23	1·04	1·17	
	1·756	1·563	1·00	0·99	—	
3 ...	0·699	0·669	1·02	0·97	1·11	
	0·819	0·676	0·97	0·87	—	
4 ...	0·7798	0·7034	0·87	0·77	0·73	
	0·8673	0·726			—	
5 ...	1·921	1·775	—	—	1·26	(1880)
	1·949	1·763	—	—	—	
6 ...	0·760	0·545	—	—	1·22	
	0·761	0·546	—	—	—	
7 ...	1·328	1·201	—	—	1·16	(1881)
	1·396	1·216	—	—	—	
8 ...	0·9162	0·7107	—	—	1·21	
	0·8181	0·7159	—	—	—	
9 ...	1·057	0·9165	—	—	1·212	(1884)
	1·072	0·9095	—	—	—	
10 ...	1·2037	1·1293	—	—	1·17	(1892)
	1·2277	1·1168	—	—	—	

The extracts of henbane were assayed by the same process, the results obtained are given in the subjoined table. Two assays of each sample of extract are given:—

Green Extract of Henbane.

No.	Per cent. of Alkaloid by Weighing	Per cent. of Alkaloid by Titrating
1 ...	0·269	0·231
	0·363	0·226
2 ...	0·386	0·221
	0·368	0·2114
3 ...	0·3973	0·316
	0·4323	0·3226
4 ...	0·5027	0·4275
	0·4989	0·423
5 ...	0·2225	0·1451
	0·333	0·1433
6 ...	0·3473	0·2135
	0·3349	0·2136
7 ...	0·2555	0·2036
	0·2603	0·2037
8 ...	0·2384	0·2051
	0·2476	0·2031
9 ...	0·3153	0·2088
	0·3454	0·2087

The authors drew attention to the fact that the extracts referred to in both the tables were supplied by growers of belladonna and henbane who are also makers of the corresponding green extracts, or by makers (not growers) on a large scale. They are all made from herbs grown in England in localities for the most part far removed from each other. They may be accepted, therefore, as representing the extracts supplied to pharmacists by wholesale firms of acknowledged repute. They confirm the observations of others as to the great variation in alkaloidal strength that exists in extract of belladonna, and also show that the variation is proportionately great in the case of extract of henbane. It would be an advantage if growers of these herbs who also make the extracts would supply to the British Pharmaceutical Conference data bearing upon the influence of soil and seasons in respect of yield of alkaloid.

The extracts are widely used, and so long as they find a place in the British Pharmacopœia it is desirable to fix for them a standard of alkaloidal strength. The experience of one of the authors proves that there is no difficulty in making green extract of belladonna to contain 1 to 1¼ per cent. of alkaloids. Why, then, not fix the strength of the extract at 1 per cent. of alkaloids, using, when necessary, sugar of milk as a diluent, and so bring it up to the official alcoholic extract? For the extract of henbane they suggest 0·2 per cent. of alkaloids.

DISCUSSION.

2 54. The PRESIDENT remarked that Mr. Naylor had in a very few words given the meeting the sense of some most important work, the value of which would be better appreciated when the members saw the analytical figures. It was also to be noted that the extracts examined were from the makers, so that the sources were more definitely known than was the case when samples were obtained from retailers.

Mr. MARTINDALE said that green extracts were not up to date, nor were the methods of making them suitable for retail pharmacy. Such extracts were peculiarly English. No other Pharmacopœias recognised them, for it was considered to be better to dry the plants and make alcoholic extract of the dried material, whereby much more useful and constant preparations were obtained. Also it was to be noted that the juices of fresh plants varied according to the season in alkaloidal content, as well as in extractive matter. Therefore they were less reliable, and he hoped alcoholic extracts from dried herbs would take the place of the green extracts.

Mr. J. C. UMNEY stated that he had made experiments with the plants collected in the middle of June and in August, and as he had found the products from August plants to be superior in appearance and other characteristics, he asked Mr. Naylor if he had tried to find whether the alkaloidal content in these conditions varied, even in plants from the same districts.

Mr. E. H. FARR mentioned that he and Mr. R. Wright had in the autumn of last year examined all these plants, and had extended their investigation to determining the proportions of mucilaginous and albuminous material. They came to the same conclusion as Mr. Martindale, that it was better and necessary to work on the dried material. He was pleased to observe that Mr. Naylor advocated standardisation, because he thought that was a change on his part.

Mr. NAYLOR, in reply, stated that he and his colleague had not considered the question of using dried material instead of fresh. Their sole object was to reply to the query in the Blue-list, and, in brief, their results showed that if belladonna comparatively free from chalk was used there was no difficulty in getting an extract containing 1 per cent. of alkaloid. He would not discuss the question whether it was better or not to use the dried plant. They had the juice-extract; it was in use, and the work of various observers showed that it was desirable to fix a standard of strength for it.

The PRESIDENT, in putting the vote of thanks, reminded the meeting that experience in regard to cocaine showed that by drying the leaves they lost cocaine; hence they had returned, as it were, to the fresh leaves by manufacturing alkaloid where the plant grew. Probably, if they were to have green extracts made from dried leaves experience would be the same, and it was worth remembering that their knowledge of these extracts was obtained from use of the fresh plants. It was not safe to depart from the knowledge of experience.

3 5. The next paper read was the following unannounced one:

ALGINOID IRON AND SOME OTHER ALGINOIDS.

By E. C. C. Stanford.

The property of passing through the stomach unchanged is possessed by few, if any, medicines; hence, where this is desired, it is usually necessary to cover the medicament with such a body as theraline, on which the stomach has no action. A complete series of therapeutic compounds having this general property would be new to medicine, would probably give rise to new developments, and add considerably to the physician's weapons of attacking disease. Such a series appear to be presented in the alginates. As far as has been ascertained, alginic acid, and its insoluble medicinal salts—iron, zinc, mercury, bismuth, lead, silver, antimony, arsenic, &c.—are unacted on by the gastric digestion, and pass the stomach unchanged.

Hence the action of these metals may be expected to present some differences or variations of the ordinary effects when presented in this form; and for a distinctive and expressive name the author called these "alginoids."

He had represented the chemical formula of alginic acid as $C_{76}H_{80}N_2O_{22}$ (*Jour. Soc. Cheml. Ind.*, 1836, page 218). It is a strong acid, evolving carbonic acid from the alkaline carbonates in the cold. However it is assimilated it is known to be a nutritious food. The soluble alginoids are those of the alkaline metals and of magnesium. The insoluble are those of the other alkaline earths and of the metals.

Alginoid Iron, or Ferric Alginate.—Ferrous salts are not precipitated by sodium alginate. The ferric salt is obtained by decomposing ferric chloride by sodium alginate, both in solution; a gelatinous brown precipitate is obtained. When dry it forms a tasteless insoluble brown powder, having a composition leading to the formula $C_{76}H_{77}Fe_3N_2O_{22}$. It contains 10·97 per cent. of Fe. It is soluble in ammonia, forming a deep reddish-brown solution, which on evaporation becomes insoluble in water, so that the alginoid iron can be administered in a liquid form. The dry powder has, however, been mostly administered, and in all cases of anæmia and chlorosis, even where gastric ulceration was present, it has been well borne, and showed a sedative action by arresting vomiting and sickness. It can be employed when other preparations of iron are not tolerated. Being quite tasteless, it is readily taken by children. It has no astringent effect on the bowels, and does not produce constipation; on the contrary, the effects are slightly laxative. It is given in doses from 2 to 15 gr. Some physicians have found the former dose quite effective.

The author then shortly referred to some other alginoids, specimens of which were on the table. The therapeutic trials of these are not yet complete, and this is, therefore, only a preliminary notice.

Alginoid Bismuth, or *Bismuth Alginate.*—This compound is a yellow powder containing 32 per cent. of bismuth. It is prepared by decomposing bismuth nitrate by sodium alginate, both in solution.

It is soluble in ammonia, remaining soluble on evaporation, and makes another form of liquor bismuthi, miscible with water.

Alginoid Mercury, or *Mercurous Alginate*, is obtained by decomposing mercurous nitrate with sodium alginate, both in solution. It is a grey powder, containing 33 per cent. of mercury or about the same strength as grey powder and blue pill. It is blackened by ammonia. It is expected that this preparation will not derange the stomach and digestion.

Mercuric Alginate.—Mercuric chloride in solution is not precipitated by sodium alginate—a distinction from albumen—but mercuric nitrate in solution is precipitated, and the mercuric alginate so obtained is a whitish-grey powder soluble in ammonia. The solution does not affect steel instruments.

Alginoid Antimony, or *Antimony Alginate*, is a white powder containing 4·5 per cent. of antimony, prepared by precipitating antimony chloride with iodine alginate, both in solution. It is soluble in ammonia, giving, therefore, another solution of antimony miscible with water. The residue on evaporation remains soluble in water.

Alginoid Arsenic is a white powder prepared by precipitating arsenic chloride with iodine alginate. It is soluble in ammonia, affording another liq. arsenii which may have some advantages. The residue on evaporation remains soluble in water.

Alginoid Alkaloids.—All the alkaloids combine with alginic acid, and the salts are soluble in water—for instance, we may have another liquor strychninæ alginatis, which certainly will not crystallise, all the alginates being gelatinous.

Alginoid Magnesia.—It is remarkable that this is a soluble salt, the alginates of the other alkaline earths being very insoluble. The two insoluble compounds—alginic acid and magnesia—combine in the presence of water. If magnesium carbonate be used, the carbonic acid is evolved. The formula is $Mg_5(C_{76}H_{77}N_2O_{22})_2$; it contains 4·2 per cent. Mg. In a 40-per-cent. solution it makes a good gum.

All the alginoid solutions keep perfectly.

The author intends to refer more fully to these and to some other alginoids in a future communication, and trusted he had sufficiently indicated the character of these preparations so as to lead to some of the members giving other valuable suggestions.

Discussion.

3.13. The President, in opening the discussion on this paper, which, by the way, was illustrated with specimens, said that it would undoubtedly be of advantage to have certain medicines which would not be assimilated in the stomach, but in the intestines.

Mr. Bird asked if magnesium alginate was a good emulsifier. He had tried the sodium salt, but it was too gelatinous.

Mr. Martindale said the series of specimens were very interesting, and appeared to offer advantages, but he could not say that of the bismuth solution, which was too weak, being only one-quarter the strength of the liq. bismuthi—itself too weak for bismuth effect. The arsenic alginate would probably be valuable, because most arsenic-preparations which disagreed with patients did so because of stomachic irritation, and as the alginate would not be absorbed by the stomach that would be avoided. He had the idea that arsenic was mostly assimilated in the bowels. The iron compound would be particularly valuable in the treatment of chlorosis, and he wondered if it would mix with wine, as that would be a nice form to give it in. Mercurous alginate he also thought well of, and spoke of some experiments which Dr. Ringer had made with the calcium salt, in the belief that it is the presence of calcium in foods which determines their assimilation. In conclusion, Mr. Martindale asked if the alginates could be used instead of keratine for pill-coating.

The President, in calling upon Mr. Stanford to reply, asked if iron alginate mixed with other medicines—as one of the reasons why dialysed iron had failed was because it did not.

Mr. Stanford said he did not think magnesium alginate could be used as an emulsifier. All the alginates were very viscous. He told how the iron alginate had come to be used medicinally, and the marvellously quick cure which followed in the case of an anæmic girl who had gastric ulcer showed that it was a remedy of great value. He scarcely understood Mr. Martindale's remarks regarding calcium alginate.

Mr. Martindale explained that Dr. Ringer had found extremely small quantities of calcium salt had a powerful effect upon the heart of a frog, so that such salts could not be so inert as was generally supposed. Even the amount of lime in tap-water affected the frog's heart.

3.25 Two papers on lemon oil were then read, the first by Mr. J. C. Umney, and the second by Mr. Parry, in the absence of Mr. Idris. They are subjoined:—

A New Constituent of Lemon Oil.

By John C. Umney and R. S. Swinton.

From the very time that citral was first stated to be the odorous constituent of lemon oil various theories have been put forward to account for the difference in both taste and odour between a natural lemon oil and a mixture of the terpene of lemon oil with citral in the relative proportion in which they were understood to exist.

It was subsequently found that citronellal was associated with citral, and had some influence upon the taste and odour of the oil, and mixtures of these two aldehydes, obtained from their most economical sources, were suggested as a still more efficient substitute for natural concentrated lemon oil.

It was found, however, that no blend, no matter in what proportion the citral and citronellal existed, possessed the same peculiarly sweet character as the natural oil.

Several methods of estimation of these aldehydic constituents have been put forward, dependent upon the formation of compounds with phenyl hydrazine, hydroxylamine, and also other characteristic crystalline compounds.

Garnett subsequently proposed (*P.J.*, vol. 56, page 323) the estimation of citral by reduction to geraniol, but the accuracy of this method was at once contested by one of us (*P.J.*, vol. 56, page 360) as a result of experiments already conducted very much on the same lines as that worker had followed. Messrs. Schimmel & Co. some months later also detailed in their annual report (October, 1896) very many experiments to disprove the correctness of Garnett's assertions.

These processes, however, for the determination of the odour-value of lemon oil consist solely in estimation of the aldehydic constituents. We have noted, however, that a simple concentrated lemon oil in which every care has been taken to free the product from stearoptene and resinified products, has a pleasant odour which is not associated with a concentrated oil separated by chemical means, and consisting practically entirely of mixed aldehydic constituents. We have therefore sought to determine to what this difference is due, and, we think, with a result that may be of some importance.

For the purpose of our experiments we concentrated 2,000 c.c. of lemon oil to 200 c.c. under reduced pressure, and, lest any of the odorous constituents should have been carried over, again concentrated the 1,800 c.c. of distillate to 100 c.c., and reserved that also. The aldehyde was removed from these concentrated oils by repeated treatment with solution of acid sulphite of sodium of 30-per-cent. strength, when a considerable quantity of uncombined oil was separated, which possessed an odour recalling geranyl acetate.

Advantage was now taken of the knowledge that both citral and citronellal when thoroughly acetylised form alkali-absorption bodies (citronellal reacting quantitatively, citral only approximately) to get an idea as to the total amount of acetylisable bodies present.

The concentrated oil, after acetylising for two hours, was found to contain 68 per cent. alkali-absorption bodies, which corresponds to about the same percentage of aldehydes. An attempt was made to check this result by estimating the concentrated oil with acid sulphite of sodium in a Hirschsohn flask, and though the reading was almost impossible, owing to the separation of the insoluble citronellal-bisulphite compound, yet it could be taken near enough to show that bisulphite did not indicate this amount of aldehyde, and that in all probability the difference was due to the presence of an aromatic ester.

This conclusion was confirmed when the aldehydes were completely destroyed by saponification with alcoholic potash solution, the alchohol dissipated, and the residue distilled. This distillate was again treated with excess of alcoholic potash solution until no trace of saponifiable bodies was left. The product was then distilled under reduced pressure, and then subsequently carefully fractionated under ordinary pressure, that portion being separated that distilled between 230° and 250° C.

This was found to possess the characteristic odour of geraniol, and by repeated fractionation the alcohol was separated, having characters in the closest agreement with those of pure geraniol.

Considerable difficulty was experienced in determining the nature of the acid combined with this geraniol in the form of ester in the original oil on account of the decomposition-products formed in the oil, the evidences of acetic acid which were obtained probably arising from a decomposition of the ester, and pointing strongly to the fact that the ester of that alcohol is the one present.

In order to get an approximate idea of the quantity present, and also to determine whether there was any difference in the proportion present in the normal pure oils of Palermo and Messina variety, large quantities of the oils were operated upon by a slight modification of the process already detailed. Quantities of alcohol corresponding to from 1·2 to 1·4 per cent. of ester were obtained, no constant difference in quantity could be said to exist in the two varieties. It does seem, therefore, that up to the present a constituent which has an important bearing upon the odour and taste of lemon oil has been disregarded, and that it is necessary that a concentrated lemon-oil shall contain not only citral and citronellal, but also this ester of geraniol in normal proportions before it can be said to represent in a concentrated form the true odour and taste of lemon oil.

NOTES ON CONCENTRATED OIL OF LEMON.

By T. H. W. Idris, F.C.S.

It is not necessary to recapitulate the various well-known data respecting oil of lemon; but it may be desirable to be reminded that the well-defined constituents of lemon oil consist of limonene, $C_{10}H_{16}$ (a terpene); the aldehydes, citral, $C_{10}H_{16}O$, and citronellal, $C_{10}H_{18}O$, with a small quantity of non-volatile matter. Small quantities of other bodies have been found by different experimenters, and experience shows that even pure lemon oil is a much more variable article than is generally supposed, and commonly contains about 4 per cent. of some body or bodies heavier than terpene, and which cannot be classed amongst the other constituents mentioned. With a view of elucidating this, and with the idea of showing how some easily separable substances can be obtained from lemon oil, and which contain in a concentrated form most of the odoriferous and flavouring principles of the oil, this research has been undertaken. The term concentrated oil of lemon is, of course, a misnomer, as the terpene (limonene) has a flavour and pungency which is peculiar to itself. It is well known that, in addition to the changes which occur from age or from exposure to air, oil of lemon decomposes much more rapidly when diffused in water or aërated water, a most objectionable occurrence from an aërated-water manufacturer's point of view, and attributed to a change in the terpene, an odour of turpentine being developed. To obviate this difficulty various tinctures of lemon-peel are used by many manufacturers, but lemonade prepared in this way is somewhat deficient in the aroma of lemon aldehyde.

Essence dealers and manufacturers have accordingly been offering various forms of "concentrated soluble essence of lemon." One specimen was found to be simply oil of lemon with an addition of alcohol; but although alcohol in the proportion of not less than 10 per cent. practically prevents change in oil of lemon, and is, consequently, a desirable adjunct, the oil still changes when diffused in water.

Other samples examined contained, in addition to the alcohol, other flavourings which appeared principally to be additions of small quantities of lemongrass oil, or of citral obtained from that oil, and in some cases an admixture of ethers with the oils of lime and orange. All these mixtures are not of much value to the mineral-water manufacturer, but the so-called "terpeneless oils" have been an introduction of decided utility. These "terpeneless" oils, as sent out, differ considerably, and the principal object of this note is to call attention to a method by which the lemon-aldehydes in oil of lemon can be separated without much change, and in a state of comparative purity. Fractional distillation of oil of lemon cannot be carried out at the normal pressure of the atmosphere without considerable change in the oil and the products; but this difficulty is overcome by fractional distillation under reduced pressure. If oil of lemon be treated in this way, and about 85 per cent. distilled at a temperature below 100° C., the distillate will be found to be perfectly white, with a very poor lemon odour, the sp. gr. and all the chemical properties being practically identical with those of limonene. The distillate gives no aldehyde reaction. If the remaining 15 per cent. of residue be treated with bisulphite of sodium in the usual way, a crystalline mass will be obtained. In practice, however, it is better to distil about 90 per cent. of the original oil. The remaining 10 per cent., an oily liquid, deposits, on cooling, a white sediment. The sp. gr. is about ·902 to ·905, and when mixed with rectified spirit it deposits a dense flocculent precipitate. If distillation of the 10 per cent. residuum is continued under reduced pressure, a very aromatic colourless oil is obtained amounting to about 7 per cent. of the original oil. A better product, it is found, results from passing steam through the residuum, when a pale yellow oil is carried over and floats on the water. This possesses to a very marked extent the pure lemon aroma, and is a very different article from citral. The final yield from most oils operated upon in this manner is approximately 6 to 7 per cent., and it is found to be very useful in improving the flavour and aroma of lemonade. The residue solidifies on cooling and only faintly smells of lemon. The terpene was not thought to be of much value, but is used as an adulterant, and it will be seen that it is quite possible to prepare an oil from what appears to be the useless residue with the addition of citral from lemongrass oil which would have the correct gravity, boiling-point, and rotation of oil, and rotation of distillate (B.P., 1898, test), and with or without being mixed with the genuine lemon oil well-nigh impossible to detect, showing even the normal amount of aldehyde. Mixtures of lævo-rotatory (French) turpentine or dextro-rotatory (American) turpentine with other oils and citral can be and are made, so that it is impossible to distinguish them from pure lemon oil by any known chemical test. In face of these skilful adulterations, the best test of the purity of oil of lemon is treatment in the way above indicated, and then judging the oil by the flavour and aroma of the separated aldehydes.

Modifications of this process are applicable for preparing terpeneless lime, orange, and many other oils.

Discussion.

3.37. The President regretted the reason for Mr. Idris's absence, and intimated that the discussions on both papers would be taken together.

Mr. E. M. Holmes said he had for many years followed what had been done in this subject, and was curious to learn how far any body represented the true lemon odour. He had mixed proportions of citral, genuine lemon oil, and terpeneless oil with sugar, and after a short time found that the citral mixture could not be recognised as lemon. The lemon-fruit flavour was even different from the flavour of the oil. He had often discussed the matter with Mr. Umney, who some time ago had given him unnamed specimens, one of which had the true lemon flavour. He was glad to learn that he had discovered what this flavour was due to.

Mr. Parry said that Mr. Umney's paper was *the* paper on the list this year. Nothing had been done with oil of lemon for years—no progress had been made. They were all working round the aldehydes, and so much so that Schimmel in a recent report stated that until chemists find a way for estimating citral no progress could be made in the subject. He did not agree with that, and considered that the citral business was bad, because anyone could add citral to an oil, and his experience of the citral-guaranteed oils was they gave a residue totally different from the residues obtainable from true lemon oil. Mr. Umney's discovery was an important one, and he hoped dealers would not now be adding geraniol acetate as well as citral to low-class lemon oils.

3.42. The following paper was then read by the author:—

Some Commercial Varieties of Dill-fruits and their Essential Oils.

By John C. Umney.

Although the dill-fruits obtained from different countries do not show such marked difference in appearance as the fennel-fruits from various parts of the world which I have already described (see *Pharmaceutical Journal*, March 13, 1897), yet the differences are probably of greater medicinal importance.

I have shown that the varieties of fennel-fruits differ considerably in size, and also in the size of their vittæ, but that in all probability they are derived from the same species, whether cultivated in England, Germany, Roumania, Russia, Persia, India, or Japan. In the case of dill-fruits, however, the evidence points strongly to the fact that the fruits are not derived from the same species, and although they are only used in this country for the preparation of dill-water, and for the distillation of the essential oil, still, the differences are of considerable importance, and appear to be worth placing on record.

The English and Indian dill-fruits are those which have up to the present been used entirely in this country, the latter being very largely imported and employed for the distillation of essential oil. Those cultivated in Germany are also largely distilled for purposes of liqueurs, and a Spanish variety is, I believe, also distilled in Southern Germany.

The English and German fruits are exactly alike, the two mericarps being usually separated from the pedicel, each of them being oval, and about $\frac{1}{6}$ inch long and $\frac{1}{10}$ to $\frac{1}{8}$ inch broad, a decided brown in colour, the dorsal ridges being inconspicuous, but the lateral much prolonged into the form of wings. Six vittæ are seen in each mericarp in transverse section.

In the case of the Indian variety the same number of vittæ (except in a few cases) are observable, but the lateral ridges are not so prolonged, and the colour of the fruits is a paler brown, the mericarps being usually not divided.

In describing the different varieties of dill-fruit, Flückiger and Hanbury ("Pharmacographia," page 292, edition 1874) write that "Dill under the Hindustani name of Suva or Soyah is largely grown in various parts of India. On account of the slight peculiarity in the fruit the Indian plant was regarded by Roxburgh and De Candolle as a distinct species, and called *Anethum Sowa*, but it possesses no botanical characters to warrant its separation from *Anethum graveolens*." It is doubtful whether this opinion is a correct one, as the difference between the essential oils appears to be far greater than would be associated in all probability with the oils of the same plants grown even in such widely different districts.

A considerable consignment of Japanese fruits has recently reached this country, I believe, for the first time, and in botanical characters they agree so closely with the Indian variety that an examination of them seemed of some importance.

I have already called attention to the fact (*P. J.*, May 4, 1895) that the oil of the Indian variety, which until recently at any rate was that very largely met with in commerce in this country, differs considerably from that distilled from the English variety, the percentage of carvol being considerably less, and the sp. gr. of the oil considerably higher, due to a body heavier than water. This body has been subsequently examined by Ciamician and Silber, who state that it has all the characters of apiol separated from the oil of parsley.

The oil distilled from the Japanese variety has a sp. gr. of ·964, and an optical rotation of + 50 5° in a tube of 100 mm.

The relative proportions of carvol (b.p. 224–226° C.) contained in the oils can be best seen by reference to the table of percentages obtained at varying temperatures of fractionation.

None of the methods hitherto put forward for the estimation of carvol appears to be completely satisfactory, although approximate results may be obtained by the hydroxylamine method (Kremers and Schreiner).

—	Sp. Gr.	Opt. Rot.	Below 200° C.	200–210° C.	210–220° C.	220–230° C.	Above 230° C.
1. English. Distilled from fruits grown at Market Deeping	·9148	+72·25°	22	14	12	50	2
2. English. Distilled from fruits grown at Canterbury ..	·9146	+80 25°	21	19	12	46	2
3. German	·9002	+70·25°	53	13	12	17	5
4. Indian	·9486	+47 5°	24	17·5	7	10·5	39
5. Japanese	·9543	+50·5°	21	12	10	8	49

The oil distilled from the German fruits has practically the same characters as that distilled from the English fruits provided that no separation of carvol has taken place, as in sample No. 3—a practice adopted to some extent on the Continent.

I have not been able to obtain a sample of the Spanish fruit for distillation, but have examined an oil reported to be distilled from Spanish fruit which possesses practically the same characters as the German oil.

It is evident from the characters of the essential oils that the Indian and Japanese varieties, although agreeing amongst themselves, differ very considerably from the English and German, and it cannot be supposed that the apiol-like body already referred to is devoid of powerful physiological action. It is imperative, therefore, that the

English or German dill-fruits should be employed for the distillation of dill-water, and that the characters of the essential oil prescribed by the new Pharmacopœia should be rigidly adhered to, thus excluding the Indian and the Japanese varieties.

DISCUSSION.

The PRESIDENT said this was a very practical paper. He would like to know whether Mr. Umney had compared the rotatory power of the several oils under discussion.

Mr. E. M. HOLMES said horticulturists and botanists differed as to what constituted a species and what a variety. Apples differ very much, but all apple-trees were of the same species It was probably a similar case in regard to the English and Indian dill, as, although the seeds of the Indian dill were more convex and rather narrower, botanists do not consider them sufficiently different to constitute a separate species. It showed the importance of the B.P. limiting the tests of identity. He would like to know what proportion of apiol Mr. Umney had found present.

Mr. G. C. DRUCE said he would like to drive the nail a little further home, and instanced the case of *Cicuta virosa*, which in the South of England was a dangerous poison, but when grown near Edinburgh had no noxious properties. A similar circumstance might account for two such very different oils being obtained from one species.

Mr. R. BRODIE (Glasgow), replying to this, stated that an old Glasgow botany professor had made this observation in regard to hemlock.

Mr. J. R. HILL remembered reading in the *British Medical Journal* that *Conium maculatum* was poisonous when grown in Edinburgh, whilst elsewhere it was non-poisonous. This peculiarity of Scotch soil required, he thought, a little investigation. He had examined hemlock grown near Edinburgh, and found it to be quite active. It was Professor Christison who originally made the suggestion.

Mr. J. C. UMNEY, in reply, said the optical rotations were detailed in the paper; as regards the percentage of apiol he had not been able to make exact determinations, but he thought it approximately 35 to 40 per cent.

3 52. The last paper taken at this session was on

ON THE SALIENT FEATURES OF THE IRISH FLORA.

By G. C. Druce, M.A., F.L.S.

Last time I had the privilege to address the members of the Conference, I was permitted to draw their attention away from the more strictly scientific and practical side of our calling to a subject which was once considered to have interest to all pharmacists—at any rate, for that short period of their existence which was spent in preparing themselves for the qualifying examination of a pharmacist, but which, alas! is now being pushed more and more out of our pharmaceutical curriculum—I mean the systematic and morphological branches of that huge and unwieldy science known as botany. Such men as Bentley, Daniel Hanbury, Stoddart, Brady, Henry Groves, and Deane, we know, placed a high value on that portion of pharmaceutical training known as field-botany. Therefore I welcome the kind offer to spare me a few minutes while I endeavour to sketch the salient features of the Irish flora. Those who had the misfortune to be present when I traced the special characteristics of the Scottish flora last year may perhaps remember that I pointed out that it was the Alpine flora which was especially represented in North Britain, and its chief similarities and alliances were to be found in the Scandinavian flora, of which the Scottish appears at one time to have formed a part. I then said that I believed I had been fortunate enough to prove the presence of another Scandinavian sedge on the Breadalbane mountains. That the plant I gathered then is the true *Carex helvola* I have since demonstrated to the Linnean Society. Moreover, a new species of grass named *Poa cenisia* var. *flexuosa* and a new variety of *Ranunculus acris*, known previously only from Greenland, were also gathered by me in Perthshire last year.

Politicians have found Ireland a troublesome nut to crack, and to the phytogeographer Ireland also presents its difficulties. Owing to its insular position, its contiguity to the melancholy ocean, and to the effect of the Gulf stream which surrounds the whole coast, the climate of Ireland is, especially in the West, more moist and equable than Britain, or, in fact, any part of Europe in the same latitude. I have not attempted to prepare a table showing the rainfall of Ireland, nor can we trust the statements made by British tourists, since, I believe, the most accurate of them peril their hopes of salvation by the statements they make regarding the rainfall of Connemara; but it will be safe for me to say that the rainfall on the western side is higher than that of the western side of Britain in the same latitude (I am excluding from this the Lake district of England), and that the rainfall on the western side of Ireland is very nearly three times as much as that on the eastern shores. The mean temperature of the summer months is about two degrees lower than in Britain, and, although this sounds only small, yet this trifling variation has very great and far-reaching effects on the vegetation, rendering, indeed, wheat-cultivation—which in England is not a much more lucrative occupation than our own much-suffering business—a most precarious crop, so that over a large portion of Western Ireland it is unknown.

Not only, therefore, have we in Ireland a lower summer temperature and a heavier rainfall, but we have a more humid atmosphere and a smaller amount of sunshine than in England. All these are factors in producing a flora whose elements differ considerably from that of the adjacent island.

European Species, roughly, 10,000.

——	Spanish	British	Irish
Dialypetalæ	2,159	690	372
Gamopetalæ	1,749	487	264
Apetalæ	242	140	84
Angiospermæ	840	438	244
Gymnospermæ ...	36	5	3
Filicis, &c.	66	71	52
	5,092	1,831	1,019

From the table, which is only approximately accurate, it will be noticed that the species of flowering-plants are relatively much fewer in number than in England—that is, in the proportion of 18 to 10—while England is poorer by nearly three times than Spain. As compared with Spain, and to a certain extent with England, Ireland is especially deficient in large bright-coloured flowers, such as are to be found in the *Compositæ*, *Labiatæ*, and the *Leguminosæ*, which essentially depend for their fertilisation upon butterflies and other insect visitors; while it will be observed that the rushes, sedges, and grasses, which have not conspicuous flowers, and are chiefly wind-fertilised plants, are, comparatively speaking, represented to a much greater extent.

I now direct your attention to a table which shows the distribution of certain types. By this it will be seen that, as might be expected, there is a great falling-off in the occurrence of what are called Germanic types, which in England attain their maximum of development in the Eastern Counties and belong to a Central European type of distribution. Out of the 130 possessed by England only about twenty are found in Ireland, and several of these are not native. In the Scandinavian or high Alpine species, of which Great Britain has 130, only about forty are recorded for Ireland, these latter occurring chiefly in the North and West of the island. I remember the first time I ascended Mangerton in co. Kerry, I said, having in mind the Cairngorms and Breadalbanes, "Why, here is a mountain without Alpine plants," and although it does possess some, they are few, not only in number of species, but also of individuals,

Types.

——	British	Oxfordshire	Irish
Atlantic	70	3	41
Germanic	127	39	18
English British ...	961	737	785
Scottish	117	3	66
Scandinavian or Highland...	120	—	40

either on that mountain or on the higher and more cragged Carran Tual. But it must not be imagined from the negative qualities I have mentioned that to the botanist Ireland is a desert. Such is by no means the case. I shall leave the North, whose acquaintance I now make for the first time; but as long ago as 1875, when I worked the West Coast and walked from Westport to Galway, over a country made up to a great extent of dreary moorland and bog, I found oases of great natural beauty in which I gathered many interesting plants, some of which are found nowhere else in the British Isles.

We have seen that over 800 species found in Great Britain find the Irish Channel too wide a streak for them to cross. On the other hand, about twenty-three species occur in Ireland which are not found in Great Britain. These consist of a rock-rose, *Helianthemum guttatum*, growing in Galway and county Cork, which, although common in the Channel Islands, exists only as a variety or sub-species in Anglesey, this variety being also found in Ireland at Inishfofin. Curiously enough, the common yellow rock-rose, so frequent on our (the English) chalky hills and limestone pastures, is not recorded for Ireland. In Sligo a caryophyllaceous plant, the *Arenaria ciliata*, is found near Ben Bulben, at an elevation of some 1,500 feet; this rare and local Irish species is common in some parts of the European Alps, and I have gathered it near the junction of the Austrian and Italian frontiers, on the Stelvio Pass, at nearly 8,000 feet. A closely-allied species, or probably a variety, is found in Sutherland and the Shetland Isles, and is known as *Arenaria norvegica*. The order *Saxifragaceæ* is well represented in Ireland, both in species and number of individuals—four or five species occur which are not native in Britain. One of these—the common London Pride of our gardens, the *Saxifraga umbrosa*—is abundant in the Killarney mountains, and is found from Donegal to Waterford. Two nearly-allied species, *S. hirsuta* and *S. Geum*, are more local and rare, being confined to Cork and Kerry. Two cut-leaved species are also found in the South-West—namely, *S. Sternbergii* and *S hirta*. The great order *Compositæ* only yields a single species, which does not occur in Britain—namely, the singular *Inula salicina*—which is found on the north-west shore of Lough Dearg, in Galway, and probably two or three varieties of the Hawkweed genus may be endemic. The Heath order affords four species—namely, the Mediterranean heath, which is local in Galway and Mayo, and *Erica Mackaina*, which occurs in the neighbourhood of Roundstone. The latter is considered to be a hybrid of *E. ciliaris* and *E. Tetralix* by some botanists; but in more recent books it is given specific rank, and it is certainly not identical with undoubted hybrids of the two plants which I have gathered near Truro. The third species of the *Ericaceæ* is the St. Dalbeoc's heath, now scarcely recognisable under the name *Boretta cantabrica* (the name is not derived from the biretta used in the same district). This St. Dalbeoc's heath is one of the most beautiful of our native plants, as it has large bells of a charming purplish-red colour, and leaves whose upper surface is of a dark glossy green, but which are silver white underneath, and when seen growing by some trench where the osmunda luxuriates it forms a sight which will scarcely be effaced from the recollection of the plant-lover. The fourth species is the strawberry-tree, *Arbutus Unedo*, whose wood is to the Killarney shops what the olive-wood is to those of the southern littoral. The arbutus forms a small but handsome tree having beautiful effects of foliage, and is especially noticeable in that portion of the drive from Glengariff to Killarney, after one has passed the summit level, down to the lakes—a drive which, in my opinion, affords the most beautiful combination of lake and mountain scenery and of exquisite variety of foliage which is to be found in the British Isles.

In the same district of Cork and Kerry is to be found a lentibulariaceous insect-eating plant, the Great Irish Butterwort, *Pinguicula grandiflora*, whose magnificent blue flowers are a striking sight. This was planted near Penzance, and has now become naturalised there. Two species of the *Orchidaceæ* are found only in Ireland—one the *Habenaria intacta*, which was discovered by Miss More, the sister of my late friend the joint author of "Cybele Hibernica," in the limestone pastures of Galway, Clare, and Mayo, near Lough Corrib, and the other still more interesting species, the Irish Lady's Traces, *Spiranthes Romanzoffiana*, which was first discovered by Mr. Drummond, at Berehaven, near Cork, in 1810, and which has recently been found in the North of Ireland, in Armagh and Derry, but is known in no other European locality. The order *Iridiaceæ* affords *Sisyrinchium bermudiana*, which grows in meadows near Woodford, in Galway, and also in Kerry, and has blue flowers; and in 1896 my friend the Rev. E. S. Marshall found on the eastern coast of Ireland, in Wexford, the yellow-flowered *Sisyrinchium californicum* in large quantity, and completely naturalised, but of whose indigenity I am not yet convinced. Two plants of the Pondweed order also occur in Ireland only in the United Kingdom, one of which is considered to be a hybrid, the other is *Potamogeton sparganifolium*, which is found in Galway. One Sedge, *Carex Rhynocophysa*, has recently been added to the Irish flora from the central part of Armagh, where Mr. Praeger found a single tuft near Mullaghmore Lough. Two Horsetails—one a species, *Equisetum Moorei*, so named after the well-known botanist of Glasnevin, occurs in Wicklow, and the other, only a variety of *E variegatum*, called *Wilsoni*, which has a wider range of distribution. A single hybrid fern, *Asplenium Clermontæ*, has been found; and three species of *Characeæ—Chara denudata, C. tomentosa*, and *Tolypella nidifica*—complete the list of plants which occur in Ireland only in the United Kingdom. Most of these will be found to belong to the Peninsula group, so called from the fact that these plants have their headquarters in the Spanish peninsula, and by some authorities are said to suggest a former continuity of land between the two countries. In addition to the special species mentioned there are some other species of the Peninsula group which occur in Ireland, such as *Erica ciliaris*, *Trichomanes radicans*, *Adiantum Capillus-Veneris*, *Simethis bicolor* (now almost destroyed at Bournemouth), and *Euphorbia hibernica*.

I said that these Irish plants belonged to different types of distribution. By far the greater number belong to the Peninsular group, but *Arenaria*, *Inula*, and *Carex Rhyncophysa* are somewhat anomalous; and three belong to a group we would not expect to be represented in the British Isles, and that is the American group. To this belong the *Spiranthes* I have already alluded to, and this is found chiefly on the western side of North America and in the Rocky Mountains, but not elsewhere in Europe. The second is the blue-flowered *Sisyrinchium bermudiana*, which is only of adventitious occurrence elsewhere in Europe; the third being the yellow-flowered *S. californicum*, from the western side of North America, which is a doubtful native of Ireland. A fourth member of this American group is abundant on the margins of lakes in Connemara and elsewhere on the west coast of Ireland, but, unlike the first three members of the group, *Eriocaulon septangulare* extends its range to Skye and the Western Hebrides in Scotland, where it is very local. This plant may have been introduced to Ireland from America by the agency of birds. There is also a pondweed formerly known as *Potamogeton lonchitis*.

I have thus briefly glanced at the salient features of the Irish flora, and can promise any botanist who may have leisure that there is an enormous amount of work to be done at the Irish flora before we can say that it is known in the same sense as that of Britain. To those who have time and energy a pleasant task awaits them in exploring some of the wild and beautiful scenery of the Emerald Isle, which always offers a hearty and cheering welcome to any visitor to its shores.

Mr. Druce finished at 4.13, and the members at once poured on to the lawn, where tea was served, after which there was a drive to Giant's Ring, Purdysburn, Ormeau Park, &c., in coaches.

THIRD SESSION, WEDNESDAY MORNING.

No fresh programme was submitted on Wednesday morning, but when proceedings commenced at 10.8, in presence of an audience numbering about thirty, the following was the order in which the

Papers

were to be read :—

1. "Note on Extract of Ginger," by T. H. W. Idris, F.C.S.
2. "Materia Medica Animalis," by J. C. McWalter, L.R.C.S.I., L.A.H.I., M.P.S.I.
3. "Ferrum Redactum," by E. Saville Peck, B.A., Ph.C.
4. "Basicity of Quinine Sulphate," by D. Howard, F.I.C., and D. Lloyd Howard, F.C.S.
5. "The Characters and Methods of Estimation of the Official Hypophosphites," by H. A. D. Jowett, D.Sc.
6. "Note on the Mydriatic Alkaloids," by H. A. D. Jowett, D.Sc.
7. "Pharmacists and the Pharmacopœia," by P. MacEwan, Ph.C., F.C.S.
8. "Galenical Pharmacy of the 1898 Pharmacopœia," by F. C. J. Bird.
9. "The Galenicals of the Pharmacopœia from a Wholesaler's Point of View," by H. Wippell Gadd.
10. "The Nomenclature of Certain Drugs of the Pharmacopœia," by G. C. Druce, M.A., F.L.S.
11. "The Chemistry of the Pharmacopœia," by P. Kelly, Ph.C.
12. "The Pharmacopœia Chemically Considered," by A. L. Doran, Ph.C.
13. "The Amount of Carbonic Anhydride available in the Official Granular Effervescent Preparations," by C. S. Dyer, A.P.S.
14. "Albumen and Some Types of Proteid Digestion," by Gordon Sharp, M.D.

Presentation from "Bell and Hills Fund."
Election of Formulary Committee.
Place of Meeting for 1899.
Election of Officers for 1898–99.

Mr. Naylor read the first paper, viz.—

Note on Extract of Ginger.

By T. H. W. Idris, F.C.S.

It is well known that alcoholic extract of ginger, commercially known as "gingerine," does not contain all the aromatic principles of the root, as the essential oil is carried over with the recovered alcohol. Acetone was found to be a more suitable solvent, boiling as it does at 56° C., and being miscible with water in all proportions. If some powdered ginger be exhausted in a Soxhlet with acetone, and afterwards with alcohol, it will be found that the whole of the aromatic and pungent principles have been removed by the acetone, which shows that it compares favourably with alcohol as a solvent. This acetone extract is a dark-brown substance of treacly consistency, intensely pungent, and possessing at the same time a full ginger aroma, the quality of which largely depends on the variety of ginger used. It is readily soluble in alcohol, forming a deep brown liquid. If steam be passed through the extract and then condensed, it carries over a quantity of the volatile oil with it. This oil floats on the surface of the condensed water, forming a yellow layer, and can be easily removed. The difference in aroma of the various kinds of ginger, though noticeable enough when examining the rhizome, is much more apparent when dealing with the oils themselves, and in this way a method of distinguishing the variety of ginger used is obtained. The various tinctures and essences of ginger may be very conveniently and readily prepared from this extract without the usual loss of alcohol, and syrup may be flavoured with it by proper diffusion at a suitable temperature without the use of any spirit, and a saving thus effected in manufacturing ginger-flavoured beverages.

The President, in moving a vote of thanks to the author, regretted his absence, especially because he might have added some details to this small but important paper.

Mr. J. C. Umney asked if Mr. Idris gave any figures to show the relative proportion of resin and oil extracted by acetone and strong alcohol, and whether anything was said about the volatilisation of the oil when the acetone was distilled.

Mr. Naylor quoted from the paper to show that the oil is not volatilised.

10.12. Thanks were accorded to the author, and the President announced that an abstract of the next paper would be given by the author :—

Materia Medica Animalis.

By J. C. McWalter, L.R.C.S.I., L.A.H.D., M.P.S.I.

As animal substances are now recognised by the British Pharmacopœia by the introduction of thyroid-gland preparations, the author submitted a short (*sic*) review of some of the principal remedies of animal origin which have been recently tried for the relief of disease. The use of glycerin as a solvent and the importance of sterilisation—points insisted on at the last meeting of the Conference—have been recognised in the preparation of liq. thyroidei of the new B.P.

The therapeutic properties of animal extracts are one of the most difficult problems of pharmacology. It is largely a biological rather than a chemical one, on account of the difficulty in deciding to what the animal extract owes its properties. The question of the therapy of animal extracts is one well suited for international investigation, the multiplicity of preparations causing confusion by the want of any proper standards or tests. Something might be done by this Conference, in the meantime, in collecting together the various reports of investigators throughout the world, and publishing a concise and succinct account in the *Year-book.*

Succus Testibus Paratus.—Brown-Séquard tried this, a sterilised extract, in insanity, insomnia, chorea, tuberculosis, senile debility, and various nerve-diseases where stimulation of the nervous system is indicated, and in many cases with apparent success.

Sperminum.—Spermine is a chemical ferment secreted by most glands and present in the blood in normal condition. Professor Poehl discovered that it possessed the curious property of preventing the accumulation in the tissues of certain decomposition-products, such as leucomaines and creatine compounds. Cases in which the spermine normally present is absent or deficient are relieved by the injection of soluble spermine prepared from fresh animal glands.

Cerebrum Exsiccatum Pulvis.—The modern isopathic movement started by the success of thyroid treatment seemed to hold out great hopes in the treatment of neurasthenic conditions and mental diseases by preparations from the healthy brains of animals. A dried preparation from the fresh brains of calves was employed for mental trouble, and a subcutaneous injection of liquor cerebri sterilisatus for neurasthenia. The results in mental cases have been disappointing, owing to the methods of preparation. The active principle is probably some highly-organised and unstable phosphorus compound, perhaps destroyed in the process of drying. On account of our ignorance of what the active elements are soluble in, an emulsion like Martindale's pancreatic emulsion, is the best available form. The following will be found practicable :—

Fresh lard melted	15 oz.
Distilled water	15 oz.
Grey substance of the brain of recently-killed calf or sheep ...	15 oz.
Powdered tragacanth	300 gr.
Oil of bitter almonds	15 minims

The brain, freed from membrane and white substance, and hot from the animal, should be dropped in the melted lard and the mixture rubbed through a coarse horsehair sieve. The tragacanth should then be added, and the water *sec. art.*, in a sterilised mortar; the flavour added last.

The emulsion should be dispensed in a wide-necked bottle. Independent of any action of the brain-substance, the emulsion must obviously be of use in checking excessive waste of tissue. A preparation of dried grey matter of calf's brain, from which the fat has been removed, has been tried by Dr. Robertson in cases of melancholia and chronic mania in daily doses of ½ to 1 dr. The cases improved.

Glandulæ Suprarenalis Siccatæ Pulv.—This little gland, shaped like a cocked hat, and situated on the top of the kidneys, has long puzzled physiologists as to its functions. In Addison's disease, however, it has been noted that these glands are atrophied. Fresh and healthy glands from animals have been tried in such cases with wonderful results. The internal administration causing great constriction of the arteries with consequent increase of blood-pressure and stimulation of the heart's action, would seem to indicate that diseases of these organs would be favourably influenced. Merck advocates the use of a powder prepared from the fresh capsules administered in doses of from 3 to 5 gr. after meals two or three times a day. Other investigators claim that glycerin is a satisfactory solvent.

Hypophysis Cerebri Siccat. Pulv.—That portion of the brain which rests on the bony structure known as *Sella turcica*, and which is called the pituitary body, has been found to be affected in the disease known as acromegaly, in which the extremities are enormously increased in size, and headache with neuralgic pains are distressing symptoms. Dr. Marinesco administered the pituitary body taken from the skull of an ox in three cases. It produced considerable increase in the diuresis, but the neuralgic symptoms were much diminished. It has also been tried in some twenty cases of epilepsy, but was found to aggravate the symptoms. The want of success in acromegaly is probably due to insufficient acquaintance with the pharmacy of the pituitary substance. It has generally been administered in tablets containing 2 gr. of the dried substance, equal to about six times as much fresh organ.

Medulla Ossium Rubra.—Modern physiological investigation has shown that the red marrow of the bones is the birthplace of the red blood-cells. The use of this substance, then, seems rational in anæmic conditions. Reports, however, of benefit are conflicting. Merck and Poehl have devised a plan of extracting the active principle of the fresh medulla (and the glands) in a saline solution, which is interesting, as well from its physiological aspect as its purely pharmaceutical side. It is claimed that in the short period which has elapsed since the introduction of this method a whole series of successful results have been recorded.

Ovaria Siccata.—Without doubt the ovaries, like other glands of the human organism, contain certain internal secretions, which occupy important relations to the entire system. It has been observed that the cessation of menstruation, either naturally or in consequence of ovariotomy, is followed by a series of disorders, which manifest themselves in the shape of nervous troubles. The brilliant clinical experiences which have followed the use of thyroid gland bid fair to be rivalled by the success of ovarian medication in climacteric troubles. It has been found possible to repress for a time, or even permanently, all the symptoms of sympathetic neurosis, such as palpitation of the heart, failure of memory, &c. In many of the cases experimented on other therapeutic measures had been tried without effect, hence the beneficial results of the ovarian-gland treatment are the more remarkable. The preparation introduced by Merck is the one chiefly used, and is the dried ovarian substance, prepared by removing the fat from the entire ovary of the cow, and drying under aseptic conditions at a temperature not exceeding 40° C. A glycerin extract ought to be a far more active and elegant form for administration. The average weight of ovaries is 3 dr., which when dried is about 2 dr., and of this the daily dose is from 8 to 16 gr. A method introduced, which is claimed to be applicable to all animal substances, and the product of which keeps well, is to macerate 20 parts of the fresh tissue in a mixture of 30 parts of water with 3 of active pepsine and 9 parts of hydrochloric acid for six hours at a temperature of 40° C. The solution is afterwards brought to the boiling-point, and neutralised with sodic carbonate, filtered, while still warm, through a soft filter which will absorb the fat, and the fluid evaporated to dryness.

Prostata Siccata Pulvis.—The prostate gland, situated at the well of the bladder, is peculiarly liable to become hypertrophied, and is little amenable to medical treatment, and the surgical methods employed are always risky, and not invariably successful. At the International Congress of Medicine held at Munich the effect of administering the chopped prostate gland of a bull to a patient was reported. A quarter of a gland, finely chopped, was administered in bread-and-butter two or three times a week. After a few weeks the organ had grown considerably smaller, the patient improved in general health, the difficulty of micturition was lessened, and there was an absence of sugar and albumen in the urine. Failing fresh prostates, an extract in saline glycerin solution according to a formula published in the *Archives of Physiology* should be made:—

	Parts
Fresh gland	2
Sterilised glycerin	2
Saline solution, 5-per-cent.... ...	1

Macerate forty-eight hours, and filter clear.

Tablets of 2 gr. of dried prostatic substance, and of which the dose is five daily, are also made, but do not seem an ideal form of administration.

Renes Siccata.—Kidney-diseases are the most intractable in medical practice. One observer noted an improvement in thirty-five nephritic patients to whom he administered fresh kidney or an extract. The flow of urine increased, while the proportion of albumen diminished or disappeared. In cases of cirrhosis of the kidney with polyuria the flow was lessened and the general health improved. The dried preparation, of which one part is equal to six of the fresh kidney, is not so active as the fresh gland or the glycerin extract. In epilepsy the results were not satisfactory. Although a promising remedy, few reports of it have appeared of late, perhaps due to the use of dried preparations, which seem to be of little value.

Thymus Siccatus.—This is a gland situated in the neck of infants, which seems to exercise considerable influence on the development of the body during fœtal life. This gland is assumed to secrete a fluid which modifies the blood to an extent somewhat antagonistic to the secretion of the thyroid gland. The proper use of thymus is in cases where the thyroid gland is in a state of abnormal activity, as in Graves's disease. The raw gland fresh from calves has been prescribed for defective nutrition in children, and in some cases with marked success. In chlorosis, anæmia, &c., it has been proved beneficial. The fresh gland is probably the most effective form of exhibiting this gland. A powder prepared by desiccating the fat-freed gland under aseptic conditions is prepared by Merck and others. One part of this equals six of the gland, and may be given in doses of 12 to 15 gr. in the day.

Thyroidinium Siccatum is the best known of the animal glands. Investigation shows the normal gland to contain two physiologically active bodies—thyroproteid, a metabolic product which is an active poison, and thyroidin, a specific product of the thyroid cells, which acts as a ferment.

Hepar.—The liver is one of the most essential organs of the body. Investigation shows that it secretes a substance which, when introduced into the veins, neutralises the toxic effect of the bile present in the blood and prevents the formation of toxalbumins. This substance can be procured by a simple pharmaceutical process. Its use is indicated in the morbid conditions of the liver existing with jaundice, and in all cases of intoxication by bile salts. Considering the important function which the liver plays in the formation of sugar, the hepatic extract has naturally been tried in cases of diabetes. When used hypodermically it was successful in decreasing the quantity of sugar. In cirrhosis it has been used with marked benefit. The dose is large, as much as 3 or 4 oz. of the fresh liver being administered in one day. Of hepar siccatum, one part of which is equivalent to five parts of the fresh gland, about 5 dr. is the daily dose. The aqueous extract is very active, but must be made freshly for each application. The glycerin extract is perhaps the most convenient; it has been given in daily doses of 4 dr. This remedy has been used in hæmorrhage on account of the presence of a ferment which has the property of coagulating blood. The liver being peculiarly liable to change *post mortem*, it is very important to make the pharmaceutical preparations whilst it is still hot from the animal.

Lien Præparatus.—The spleen contains a specific substance not destroyed by boiling, which, when subcutaneously injected, considerably increases the proportion of hæmoglobin in the blood and increases the number of blood-corpuscles. A body containing iron and iodine, and called linadene, has been extracted from the spleen, but has not had its properties investigated. In anæmia, &c., an aqueous extract has been employed with success; it has also been used with gratifying results in malerial cochexia, accompanied by hypertrophy of the spleen. The pharmacy of the spleen needs further elucidation, there being conflicting records of results obtained. The dose for dried spleens is from 4 to 12 gr. thrice daily in water, capsules, or tablets.

Mammæ.—Dr. Robert Bell has obtained good results by the use of preparations made from the mammary gland of the cow. Tumour formation was reduced in a remarkably short time, with improvement in the patient's condition. The preparation hitherto used has been the powder from the fresh gland, of which one part is equal to eight or nine parts of the recent gland. Of this 5 to 10 gr. is given thrice daily. A saline solution, which has been prepared, called opomamminosa, given in doses of 1 to 2 dr. daily, is likely to be more serviceable.

Pulmones.—Prepared from the parenchymatous lung-tissue of robust young sheep. It has been tried in cases of chronic bronchitis, tuberculosis, and phthisis of the lungs and larynx with considerable improvement, and is believed to be applicable in all chronic diseases of the lungs. Pulmonary juice has been administered subcutaneously in about drachm doses, or with a little water every morning on an empty stomach. Dried powder in doses of about a drachm daily caused increase in the weight and dispelled the fever in a phthisical patient on whom it was tried.

Glandulæ Bronchialis.—As the bronchial glands are credited by physiologists with secreting a substance capable of resisting the entry of bacilli into the air-passages, it has been thought that the natural healing-powers of diseased organs might be increased by the artificial introduction of the glandular substance. This has been done in cases of tuberculosis, but the results were disappointing. Perhaps if more pharmaceutical skill is brought to bear on the substance a more perfect preparation may be produced with better physiological results.

Extractum Corporis Ciliaris.—This is prepared from the little purplish black substance in the eyeballs, called the ciliary body, which in its normal condition filters the serum and secretes into the eye a fluid—the aqueous humour—which is almost entirely free from albumen. In certain conditions where the aqueous humour fails to be filtered properly, as in sympathetic ophthalmia, albumen enters the eye and becomes deposited on the crystalline lens, interfering with vision. Troubles of this kind can be much modified by the introduction of an extract from the ciliary body of the ox's eye, to which a little resorcin is added as a preservative. It is injected under the conjunctiva or dropped into the eye, one drop every two hours.

Glandula Parotis.—This is the gland which, when inflamed, gives rise to mumps. Frequently when inflammation leaves the parotid gland it settles in the ovaries or testicles; hence it is thought that an extract of parotid matter might be useful in ovarian disease. In cases of enlarged and painful ovaries it has been tried with complete success. Parotid-gland preparations may be made from the glands of rams or ewes. One part of the dried powder is equal to ten parts of the recent gland, and may be given in 5-gr. doses, or the warm gland may be treated with sterilised glycerin or saline solution to form an extract.

A few remarks on the general features which should characterise organo-therapeutic preparations were then given. When made by the cold process these extracts should present the characteristics of albuminous fluids—coagulate by heat and be precipitated by strong nitric acid and potassium ferrocyanide with acetic acid. They give, with strong alcohol in excess, a precipitate which roughly indicates the strength of the solution. They should not give the reaction for albumoses (precipitate with acetified sodium-chloride solution), nor should they give the biuret reaction of peptones. Most of the preparations can be recognised by the smell or by the microscopic examination of the residue evaporated after treatment with alcohol. When in solution they should be perfectly limpid and clear, with no trace of bacterial infection, as evidenced by the absence of any odour of putrefaction, though they may show traces of the characteristic odour of the organ from which they are obtained. All vessels containing organic extracts should be thoroughly sterilised, and such substances as tablets or powders be freed from every trace of moisture, and preserved in sealed bottles or in receptacles containing lime. Thyroid-gland tablets should be rejected unless they show traces of iodine. Dissolve a tablet in water, and add strong nitric acid and a few drops of chloroform, which ought to show, after agitation, the characteristic violet tint of iodine.

Discussion.

10.26. The President remarked that Dr. McWalter had placed before the meeting a large number of facts regarding these animal remedies, which seemed, according to modern experience, to produce benefit. When one considered these things one thought that they were going back to old times and crude remedies.

Mr. E. C. C. Stanford said they were much indebted to Dr. McWalter for this elaborate paper, which could not be done justice to, even by Dr. McWalter himself, in an abstract. He was pleased that Dr. McWalter had emphasised the remark that they knew very little about the chemistry of these bodies, but in the case of the thyroid, whatever the active constituents might be, iodine has something to do with its action. Since the previous day, Mr. Stanford said, he had obtained a sample of thyroiodin extracted from the glands after Dr. Hutchinson's colloid had been extracted from them. (Applause.)

11.30. Thanks having been heartily accorded to Dr. McWalter, the next paper was taken, viz. :—

Notes on Ferrum Redactum.

By E. Saville Peck, B.A., Ph.C.

This investigation was undertaken with a view of finding out how near commercial samples of ferrum redactum approached the B.P. standard of purity.

Fifteen samples were collected from various sources. The general appearance was noted in each case (see Table B). It will be seen that the more silvery grey the sample is the more free metallic iron it contains. The brown masses consisted chiefly of ferric oxide (Fe_2O_3). When treated with hydrochloric acid no sample completely dissolved, the hydrogen liberated had a smell resembling a hydrocarbon (such as carburetted hydrogen) or an olefine. The presence of sulphur is due doubtless to insufficient purification of the hydrogen used in the manufacture. Ferrocyanide of potassium gave a precipitate in the acid solution, varying from light to dark blue. Arsenic was searched for by a modification of a test described in Crookes's "Select Methods." One gramme of ferrum redactum was placed in a small flask, on to it was poured 20 c.c. dilute sulphuric acid, the neck of the flask was lightly plugged with cotton-wool and tied over with a small filter-paper. The latter was then moistened with two or three drops of mercuric chloride solution, and the whole gently warmed. The presence of arsenic is indicated by the appearance of a lemon-yellow colouration, gradually deepening to pale yellowish brown. Nine samples out of twelve were found to contain arsenic in variable quantities, which suggests the advisability of introducing a limit to its presence in future editions of the B P

Alkalies were detected by shaking and slightly warming 1 gramme of ferrum redactum with 5 c.c. of water, filtering, and testing with red litmus-paper. The solid substance was found to give an alkaline reaction when placed on red litmus-paper and moistened with a drop of water, due doubtless to the action of the oxygen and carbonic anhydride of the atmosphere, hence the importance of not allowing the ferrum redactum itself to come in contact with the paper. Samples containing alkalies are more likely to become oxidised in a damp atmosphere.

In estimating the amount of free iron by the B.P. process with copper sulphate, which requires 75 per cent., or more accurately 74 9488 per cent., it was found difficult to obtain concordant results until the following modifications and details were complied with :—(1) The ferrum redactum was finely powdered, and intimately mixed until quite homogeneous. (2) The copper-sulphate solution used was tested for ferrous iron and found pure before being made according to the directions. (3) The iron used was weighed out by noting the difference in weight of the corked tube containing it before and after pouring some of it out into a flask. (4) The copper-sulphate solution was added *cold* in the proportion of 15 c c. to every 25 grammes of iron taken. (5) The flask used was fitted with a Bunsen valve, this being simply a well-fitting cork pierced with a straight glass tube (about 30 c m. in length), a small piece of indiarubber tubing with short slit in it, and glass rod to stop the open end. The oxygen of the air cannot enter, but the steam, &c., have free exit. (6) The flask was placed on a water-bath, and shaken *frequently* during half an hour. (7) The liquid was rapidly filtered, the precipitated copper and the iron oxides thoroughly washed with boiled distilled water, and the whole made up to 100 c.c. Of this, 10 c.c. was taken, and to it 10 c.c. of dilute sulphuric acid added. Standard permanganate of potassium ($\frac{n}{10}$ is a convenient strength) was then run in until faint permanent red colouration took place. The mean of three or four determinations was taken, the number of c.c. used noted, and the percentage calculated.

Permanganate was found more convenient in many ways than bichromate solution, which was used earlier in the investigation. From Table B it will be noticed that five out of twelve samples were above the B.P., 1898, requirements, and six above that of the B.P., 1885. The percentage of iron is therefore fairly satisfactory, but the presence of sulphides, carburets, and arsenic points to insufficient care being exercised in some of the minor details of manufacture.

The results obtained by the B P. method were compared with the results obtained by the U.S P., 1890, method. This process depends on the fact that the free metallic iron is converted by mercuric chloride into ferrous chloride.

The process is as follows:—About ·556 gramme of ferrum redactum is carefully weighed and placed in a flask with Bunsen valve, and upon this is poured a solution of 2·5 grammes of mercuric chloride in 50 c.c. of water, or in these same proportions according to weight taken. The flask is then placed in a water-bath, and frequently agitated for an hour. It is then allowed to cool, made up to 100 c.c., and well shaken. Ten c.c. of the filtered solution is then taken, and to it is added 10 c.c. of dilute sulphuric acid, the mixture titrated with standard permanganate, and the percentage of iron calculated.

Table B.

Analysis of Twelve Samples of Ferrum Redactum.

Sample	General Appearance	Per cent. of Free Iron	Sulphides		Test with Litmus-paper
			Indicated by Smell	Indicated by Lead acetate Paper	
A	Silvery grey, slight lustre	88·67	Nil	Faint trace	Nil
B	Grey, with brown masses	72·71	Slight smell	Traces	Faintly alkaline
C	Silver grey, with brown masses	76·74	Nil	Faint traces	Nil
D	Grey, with brown masses	84·18	Nil	Absent	Strongly alkaline
E	Black cakes	61·65	Distinct smell	Traces	Nil
F	Chocolate black	41·66	Distinct smell	Slight traces	Nil
G	Silvery grey, with brown masses	67·22	Distinct smell	Faint traces	Nil
H	Black	71·34	Strong smell	Faint traces	Strongly alkaline
I	Black	66·69	Strong smell	Faint traces	Strongly alkaline
J	Silvery grey, with few masses	76·16	Nil	Absent	Nil
K	Dark grey	47·72	Nil	Faint traces	Nil
L	Chocolate grey	88·33	Nil	Absent	Alkaline

[Table A given by the author is the first part of Table D (B P. method); it is therefore unnecessary to repeat it.]

[Table C is the last part of Table D (U.S.P. method), with a column showing that confirmation in some cases by the thiosulphate method yielded concordant results.]

Table D.

Comparison of B P, 1898, *Copper-sulphate Method and U S.* 1890, *Mercuric-chloride Method for the Estimation of Ferrum Redactum.*

Sample	B.P., 1898, Method	U.S., 1890, Method	Per cent. Averaged Difference
X 1	91·68	85·65	6·18
2	92·06	85·74	
Y 1	60·13	41·19	19·40
2	60·65	41·79	
Z 1	41·91	31·16	10·29
2	41·66	31·82	

To confirm this assay, the slight red colour left over from above was decolorised by the addition of a few drops of alcohol, then about 1 gramme of potassium iodide free from iodate added, and the whole kept at a temperature of about 40° C. for half an hour in a well-corked flask. The liberated iodine was then titrated with standard thiosulphate of sodium, and calculation made. Table D, it will be seen, shows that the copper-sulphate method invariably yields a higher percentage of iron than the mercuric-chloride method, and varies fairly constantly in the same sample. The reason for this discrepancy is difficult to tell. It may be due to the presence of mercurous chloride formed in the mercuric-chloride method, or it may be that copper-sulphate solution, being invariably acid, dissolves some of the FeO present in some samples, forming ferrous sulphate, and so gives a higher reading than the correct one.

It is suggested that future editions of the B P. should order the hydrogen used in making ferrum redactum to be carefully purified, and that tests should be added to indicate (1) absence of sulphides, (2) absence of more than 1 per cent. of insoluble residue, (3) absence of alkaline carbonates, (4) a limit to the amount of arsenic present, and that various modifications be made in the method for estimation as detailed above.

10.42. The President having invited discussion, Mr. Martindale remarked that the paper was of great interest, and the Conference was indebted to the author for calling attention to the presence of arsenic, which no doubt came from the iron. It is impossible, he was told by manufacturers, to get reduced iron entirely free from sulphur; the quantity which could be analytically detected was so extremely small that it could not be got rid of; and, though old Professor Redwood used to say that the sulphur was much objected to by patients, still it had to be tolerated. He had observed, in going over the Pharmacie Centrale's works at St. Denis, that they made all their ferrum redactum so as to get it sulphur-free. The B P. copper-sulphate test was weak in so far as the precipitated copper was not directed to be washed: that was probably a slip. He had got his son to try the tests, and his results entirely corroborated Mr. Peck's.

Mr. Siebold said that although the old iodine-method of assay was not good, one had recently been proposed which consisted in covering a weighed amount of the reduced iron with water, adding from a tube an excess of iodine, so combining the metallic iron, allowing the solution to settle, dissolving the excess of iodine with potassium iodide, making the whole up to a definite volume with water, and titrating a known portion of this with standardised sodium-hyposulphate solution.

Mr. J. C. Umney recalled the fact that the late Mr. Fage had worked on this subject, comparing the copper and iodine methods, and he asked if Mr. Peck could tell th meeting the relative efficiency of the methods. Mr. Umney also pointed out that the colour of reduced iron varies with the fineness of the powder, and explained that the German manufacturer who supplies the bulk of this product sells it in various percentages, at corresponding prices, which also had something to do with the colour. (Laughter.)

Mr. D. **Lloyd Howard** suggested a comparison of the arsenic test with Marsh's, and explained that arsenic was exceedingly difficult to get rid of from iron preparations.

Mr. **Peck** then replied, pointing out that the more copper-sulphate solution there was used in the assay the more free iron one obtained. He had worked the iodine method, but had not compared it with the copper one, nor had Fage. The samples were obtained from wholesale druggists, pharmacists, hospitals, and drug-stores. (Laughter.) The arsenic test used detected 1 part in 100,000. (Applause.)

10 54. The following paper was then read by the author:—

The Characters and Methods of Estimation of the Official Hypophosphites.

By H. A. D. Jowett, D.Sc.

(*Contribution from the Wellcome Research Laboratories.*)

It is generally recognised that the methods at present known and employed for estimating the amount of hypophosphite in the commercial salts are unsatisfactory. The object of this investigation was to devise an accurate method for such determinations, and having done this it was thought of interest to supplement its description with an account of some of the properties of the various hypophosphites prepared for the purpose of this inquiry.

Hypophosphorous acid was discovered in 1816 by Dulong, and several of its salts were prepared and their properties examined by Rose. Those of interest to the pharmacist, and dealt with in this paper, are potassium, sodium, calcium, barium, iron, and manganese salts. The calcium and barium salts are obtained by boiling the respective hydrates and phosphorus in water, filtering, and evaporating the resulting aqueous solution of the hypophosphite formed. The sodium and potassium salts are prepared by double decomposition from the calcium salt, and may be purified by crystallisation from alcohol, in which both are soluble. The iron and manganese salts can also be prepared by double decomposition, but they are insoluble in alcohol. All the hypophosphites are more or less soluble in water, and are easily oxidised to phosphites and ultimately to phosphates. Impurities may be detected by the ordinary reagents; phosphite by the reaction with barium chloride or lead acetate, since barium phosphite is but slightly soluble in water and lead phosphite insoluble.

P. de St. Gilles first proposed to estimate hypophosphorous acid or its salts by titration with potassium permanganate, stating that the oxidation was easily accomplished; whilst Rose proposed the oxidation of the acid by mercuric chloride, and estimating the amount of hypophosphorus acid present by weighing the calomel formed. In 1887 Lunan, in examining the acid, rejected the permanganate method and adopted the calomel estimation, but did not give any reason for this nor any data to show the accuracy of the latter method. In 1889 Moerk (*A J.P.* 1889, pages 326, 386, 459) published a lengthy paper dealing with the qualitative and quantitative examination of hypophosphorous acid and such of its salts as are largely used in America. In addition to the permanganate and calomel methods, he estimated the salts by first oxidising with bromine and then determining either the hydrobromic acid or the phosphate formed by general methods. He found the permanganate method unsatisfactory, as a brown precipitate is formed even in acid solution, which only slowly oxidises the phosphite. Good results were, however, obtained with the calomel and bromine methods. No evidence of the accuracy of these methods was given and apparently impure material was used, as in the course of the paper it is mentioned that unsatisfactory results were obtained owing to "the alkaline hypophosphites containing probably chlorides," and a correction is introduced in a late paper for the impure bromine used for oxidation. Assuming that concordant results were obtained, this is no proof of the accuracy of the methods, and it is not stated that even these were obtained. In qualitative examination of several salts, phosphite was only met with in one case—viz., a potassium salt, stated to contain 13 per cent. of phosphite and which gave no precipitate with lead acetate and acetic acid. The evidence on which the presence of phosphite was based was a small difference in results obtained by different analytical methods. These results are contrary to published statements and the author's own experiments, as lead phosphite is insoluble in water acidulated with acetic acid, and it is only rarely that commercial specimens are met with which are free from phosphite. There are other statements in the paper referred to which require modification, and one is regretfully led to the conclusion that little reliance can be placed on the results.

In 1891 Amat (*Compt. Rend.*, cxi., page 676) recommended the calomel method, urging that with permanganate there is a tendency to two errors—(1) by incomplete oxidation of the hypophosphite, (2) by decomposition of the permanganate at high temperatures. He also noted the formation of a brown precipitate during titration with permanganate, which was only completely dissolved on the addition of oxalic acid. The U.S.P. adopts the permanganate method, and makes the curious mistake of requiring the oxalic acid to discharge the "red" colour, whilst in reality it is a brown precipitate which is gradually decomposed by the oxalic acid. No tests are given for phosphite except in the case of the calcium salt, when the lead-acetate test is erroneously stated to detect acid phosphate—a most unlikely impurity. The sodium salt is described as hydrated; that found in European and American markets (with one exception) is almost anhydrous.

In 1893 Roe pointed out that phosphites appeared to be a common impurity in commercial hypophosphites. In 1897 C. T. Tyrer (*C. & D.*, li., page 286), in a paper read before the Conference, stated that the permanganate method is unsatisfactory, and pointed out that phosphites are the most likely impurity. He suggested a new method of estimation, which was to first precipitate with barium chloride for the removal of phosphates, phosphites, sulphates, or sulphite, to filter, and then to estimate the hypophosphite in the filtrate by the reduction of copper sulphate. Estimations by this method are stated to be very accurate; but as no experimental data are given it is impossible to say whether the author checked his method by analyses of pure material. It is stated that the U.S.P. method gave good results, as the sulphuric acid in excess keeps the manganese in solution. Dr. Jowett was unable to confirm this statement, as he has always found that a brown precipitate is formed, as stated by Moerk and Amat. Again, hypophosphites are stated to react with mercuric chloride in the same way, whether excess of mercuric salt or of hypophosphite be present, becoming in the cold partially reduced to subchloride and on boiling to mercury. He has found that if the mercuric chloride is in excess calomel only is formed, but if the hypophosphite is in excess reduction takes place to mercury. That this is so follows from the method proposed by Rose and others, and which depends on the estimation of the calomel thus formed. This method is further stated to be unsatisfactory because of a tendency to complete reduction to mercury, but Dr. Jowett has found that this is easily remedied by pouring the solution of the hypophosphite into an acid solution of mercuric chloride in excess, when the calomel is obtained quite white, and with no tendency to further reduction. Finally, the new B.P. adheres to the unsatisfactory tests of the old edition, and gives no method of estimation, but simply directions to boil a given quantity of the salt with potassium permanganate, when on filtration a "nearly" colourless solution should result. It is also stated that the solution of the salt should give little or no precipitate with lead acetate, and it has been repeatedly shown that it is very seldom a commercial salt meets this requirement. Further, the standard of purity required for the permanganate test is not the same as that for the lead-acetate test, for a salt that gives quite a considerable precipitate with lead acetate will yield, when tested as directed, a nearly colourless solution.

In reviewing these methods of estimation it will be noticed that no author adduces the necessary proof of the accuracy of the method—viz., analysis of pure material and of mixtures containing a known amount of impurity. Further, in every method, except that of Tyrer, no notice is taken of the well-known fact that the chief impurity present—viz., phosphite—will behave in a similar manner to oxidising-agents as the hypophosphite. Any method therefore to be accurate must either be uninfluenced by any impurities present or the disturbing impurities must first be removed. Since only Tyrer's method fulfils this first essential condition it is the only one which calls for comment. His method depends for its accuracy on the completeness of the removal of the impurities by barium chloride, since if any phosphite remained in solution it would reduce the copper sulphate in the same manner as the hypophosphite. Barium phosphite is, however, slightly soluble in water, as can be easily demonstrated by dissolving the barium hypophosphite of commerce, and adding a drop of lead-acetate solution, when a precipitate of lead phosphite will be thrown down. This being the case, the method cannot be accepted as accurate, owing to the incomplete removal of impurities. It is thus clear that no method of estimation previously described can be considered satisfactory. In the method which Dr. Jowett now proposed the impurities are first removed by lead acetate, lead phosphite and other impurities being insoluble in water. The excess of lead is then removed by hydrogen sulphide, and the filtrate containing the hypophosphite completely oxidised to phosphate, which is estimated either gravimetrically or volumetrically. He has proved the accuracy of this method by the analysis of pure material, and of mixtures of pure material with known amounts of likely impurities. In the course of the investigation he has prepared some pure salts and examined their properties, made some experiments with the hypophosphites of iron, and finally made a complete examination of the principal salts of the leading British and American manufacturers which has afforded some interesting results.

EXPERIMENTAL WORK.

Sodium Hypophosphite.—The commercial salt was purified by boiling a portion with strong alcohol, filtering, and allowing the filtrate to cool, when long transparent prismatic crystals, sometimes an inch in length, separated. The purity of the salt was proved by taking a concentrated aqueous solution, adding a drop of acetic acid, and then a few drops of lead-acetate solution; if the liquid remained quite clear it was regarded as pure, freedom from other ordinary impurities having been previously ascertained. These crystals were found to contain one molecule of water of crystallisation, and were extremely deliquescent, apparently more so than the granular salt of commerce. Experiments were made to see if the salt could be dried without decomposition. The pure salt was heated for two hours at 100°, and afterwards for one hour at 110°, when it had ceased to lose weight, and on testing with lead acetate was found to be quite pure. Experiments were made also to see if a solution of the salt in air-free water could be boiled without decomposition. This was found to be the case if the water is boiled for at least ten minutes and the salt quickly added; it then suffers no decomposition on further boiling. In the following experiments the salt was dried for one hour at 110° C., experiments showing that this procedure dried the salt completely and without decomposition. The first experiments were made with the permanganate method, as follows:—

About 1 gramme of the dried salt was dissolved in a convenient quantity of water, 1 c.c. of sulphuric acid, and 50 c.c. $\frac{n}{10}$ potassium permanganate added, and the mixture boiled fifteen minutes, then $\frac{n}{10}$ oxalic acid added till colourless, and finally $\frac{n}{10}$ permanganate till the faintest pink colouration was evident. If on standing five minutes the colouration is unchanged the calculation is made from the data in the usual way. If, however, the pink colouration fades or changes to a brownish tint the hypophosphite has not been completely oxidised, and more permanganate must be added and the operation repeated. Three portions gave results from 99·6 to 101·1 per cent.

The method not giving accurate results, experiments were made to determine the cause of error. A blank experiment showed that a portion of the permanganate is decomposed on boiling; this and the difficulty of completely oxidising the hypophosphites, and the presence of reducing chlorides, caused the method to be abandoned.

The calomel method was next tried, though there is an initial difficulty in properly drying the calomel. The solution of the pure salt was poured into a solution of excess of mercuric chloride acidulated with hydrochloric acid, and the mixture heated in a water-bath for one hour, and the calomel separated and weighed. Two estimations gave 101·4 and 101·2 per cent. These results and the difficulties of the method led to its abandonment.

The next method tried was that of oxidation and subsequent estimation as phosphate. The oxidation is carried out by bromine, or better by potassium chlorate and hydrochloric acid in the usual way, and the resulting phosphate estimated. The results obtained were very accurate, and this method having been proved accurate on pure material it was consequently adopted.

The next experiments were made on a mixture of pure sodium hypophosphite and sodium phosphite. About 3 grammes of the dried salt is dissolved in 10 c.c. of water, 3 c.c. of a 10-per-cent. solution of lead acetate added, and the mixture allowed to stand twelve hours. It is then filtered, the precipitate thoroughly washed, and the washings added to the filtrate, which is acidified with hydrochloric acid and then saturated with hydrogen sulphide, boiled, filtered, and the lead sulphide thoroughly washed. The mixed washings are then evaporated to a low bulk, and 5 c.c. hydrochloric acid and 1 gramme potassium chlorate added and gently heated for half an hour, then concentrated to about 20 c.c. and the phosphate finally estimated. The method gave accurate results (within the usual limits of experimental error), a mixture containing 90·95 per cent. of hypophosphite of sodium showing 90·38 and another of 98·56 per cent. showing 98·30. The usual tests were made for metallic impurities—calcium, carbonate, sulphate, and phosphate. With regard to the last-named it must be remarked that the absence of a precipitate with magnesia mixture does not necessarily imply that no phosphate is present as the test is not so delicate, but that it is certainly not present in more than traces. Attention was also directed to the test for chlorides. Contrary to general statements, it is not easy to completely oxidise this salt by means of nitric acid, and it is therefore necessary in carrying out this test to boil for at least five minutes with nitric acid, then add the silver nitrate and boil for another five minutes if any precipitate is formed. Phosphites and sulphites were tested for in the precipitate produced by lead acetate by the method described by Tyrer. Carbonate and moisture were estimated in the usual way.

Potassium Hypophosphite.—This salt is anhydrous, and can be purified in a similar manner to the sodium salt, but this purification is a little more difficult owing to the limited solubility of the salt in alcohol. The quantitative and qualitative examination of this salt is carried out in a similar manner to the sodium salt, except that in the case of this hygroscopic salt the moisture is not determined.

Calcium Hypophosphite.—This salt is not easily obtained pure, and some commercial specimens do not form a clear solution with water. When the salt is crystallised from water by evaporation *in vacuo* at the ordinary temperature three separate fractions give the reaction with lead acetate, consequently it is not possible to purify the salt by re-crystallisation. It may, however, be prepared quite pure in the following manner:—To the aqueous solution is added lead acetate in slight excess, the mixture then filtered after standing twenty-four hours, and the filtrate saturated with hydrogen sulphide and filtered. The hydrogen sulphide is then removed by a current of air, and the salt precipitated by the addition of alcohol to the aqueous solution. The pure salt crystallises in pearly flakes which give no reaction with lead acetate.

Several contradictory statements have been made regarding the solubility of this salt in water. The U.S.P. gives 1 in 6·8, Tyrer 1 in 7·2, B.P. 1 in 8, and various text-books 1 in 6, but it is not clear whether these statements refer to the commercial article or the pure salt. With the pure salt Dr. Jowett determined its solubility and found it to be 1 in 6·43 parts of water at 20° C. The method of analysis has to be slightly modified for the calcium salt on account of the insoluble calcium phosphate formed. If weighed as $Mg_2P_2O_7$, the best method is to proceed as with the sodium salt, then remove the lead and calcium as sulphate by precipitating with dilute sulphuric acid and adding alcohol. The further operations are the same as with the sodium salt. A better method is to estimate volumetrically by uranium acetate, following the usual precautions observed in the presence of calcium, and carefully standardising the solution against pure calcium hypophosphite. Good results were obtained by both these methods on the pure salt.

Manganese Hypophosphite [$Mn(PH_2O_2)_2.H_2O$].—This salt is easily prepared by dissolving manganese carbonate in the equivalent quantity of hypophosphorous acid and crystallising from the hot aqueous solution. It crystallises with one molecule of water, and is somewhat difficult to estimate. It cannot be done by the magnesia method, as the manganese cannot be completely removed, but good results were obtained with the uranium method by proceeding as with the calcium salt, but first removing the lead and most of the manganese by ammonium carbonate. In a sample prepared by myself from the commercial acid I found 98·61 per cent. of manganese hypophosphite.

Iron Hypophosphite.—This salt is official only in the U.S.P., and can be prepared by two distinct methods—(1) from ferrous sulphate and calcium hypophosphite by double decomposition, filtration, and evaporation of the filtrate, when a mixture of ferrous and ferric hypophosphites and phosphites with calcium sulphate is obtained; (2) from a soluble ferric salt and a hypophosphite by double decomposition, filtration, and washing and drying the precipitate obtained. This product is chiefly ferric hypophosphite, with a varying amount of impurity, dependent on the purity of the materials used and the thoroughness of the washing. The qualitative and quantitative examination of these salts was carried out as follows:—The tests for calcium, sulphuric acid, carbonic dioxide, and chlorine were made in the usual way, observing the precautions necessary and detailed under sodium hypophosphite. Phosphite is detected by shaking up ·5 gramme salt with 10 c.c. of a 5-per-cent. solution of sodium hydrate in the cold, filtering, acidifying the filtrate with acetic acid, and adding lead acetate. If much sulphate is present it is necessary to further test the lead precipitate by reduction. Unfortunately the author was unable to devise a method of estimating the amount of hypophosphite present in the salt without introducing the error due to phosphite, but this can be partly remedied by noting the amount of lead precipitate in the test above detailed. The estimation is then carried out on about ·3 gramme of salt by first oxidising with potassium chlorate and hydrochloric acid in the usual way, then adding ·5 gramme sodium citrate, and, finally, excess of pure sodium hydrate. The precipitate is washed thoroughly, the iron contained in it estimated iodometrically, and the phosphate contained in the filtrate by the usual analytical methods. Blank experiments were performed in this way on a mixture of pure ferrous sulphate and sodium hypophosphite, and proved the accuracy of the method. Specimens were then made of ferrous and ferric hypophosphites by different methods, and the resulting products examined. The experiments made it clear that the best salt is the ferric hypophosphite, which should be used, and not the mixture from a ferrous salt.

Examination of Commercial Specimens.—Having worked out a satisfactory and accurate method of assay for these salts, specimens of the sodium, potassium, calcium, and iron salts were obtained from two leading English and three American makers, with the following results:—

Sodium Hypophosphite.

Sample	Na_2CO_3	Moisture	$NaPH_2O_2$ Per cent. Dried Salt	Impurities
B_1	0·16	3·19	91·52	Phosphite, traces Ca, ″SO_4, ′Cl, ″CO_3
B_2	0·08	9 92	96·97	Phosphite, traces Ca, ″SO_3, ″SO_4, ′Cl, ″CO_3
A_1	0·09	14·41	99·78	Traces phosphite ″CO_3 ′Cl, ″SO_4
A_2	0·79	1·32	96·53	Phosphite, traces Ca, ″SO_4, ′Cl, ″CO_3
A_3	0·36	4·09	98·26	Ditto

Potassium Hypophosphite.

Sample	K_2CO_3	KPH_2O_2 Per cent. of Dried Salt	Impurities
B_1	2·8	94·62	Phosphite, traces Ca, ″SO_4, ′Cl′
B_2	0·4	98·06	Phosphite, traces Ca, ′Cl, ″SO_4, ″SO_3
A_1	0·0	98·11	Phosphite, traces ″SO_4, ′Cl
A_2	3·72	92·52	Phosphite, traces ″SO_4
A_3	0·68	98·51	Phosphite, traces Ca, Cl′

Calcium Hypophosphites.

Sample	Per cent. of $Ca(PH_2O_2)_2$	Impurities
B_1	97·50	Phosphite and sulphate
B_2	98·18	Traces iron, phosphite, and sulphate
A_1	99·37	Traces phosphite
A_2	97·64	Phosphite and sulphate
A_3	99·61	Nil (This sample dissolved readily in 8 parts of water)

Iron Hypophosphites.

Sample	Iron	Ferric Hypophosph.	Impurities
B_1	22·34	84·12 (ferrous)	12 per cent. $CaSO_4$, phosphite and Cl
B_2	21·96	89·84	Phosphite, traces Ca, Cl
A_1	22·54	98·84	Phosphite, traces Ca and SO_4
A_2	23·00	95·02	Ditto
A_3	20·20	87·58	9 per cent. Na_2SO_4, phosphite and Cl

B_1 was chiefly ferrous hypophosphite, and had been made from ferrous sulphate and calcium hypophosphite; A_3 was insufficiently washed.

Barium Hypophosphite.—This salt can be estimated in the same way as the calcium salt, omitting the alcohol in removal of the barium. The permanganate method here gives results higher than the actual value, as in the case of the sodium and potassium salts.

As a result of this work the author suggests, as worthy of the consideration of various Pharmacopœia Revision Committees, the necessity of a thorough revision of the tests for these salts and the need of fixing some standard, which might be as follows:—Calcium and barium salts, 98 per cent.; sodium and potassium salts, 96 per cent.; and the ferric salt, 95 per cent. As a suggestion for the tests the author gives those for sodium hypophosphite, based on the system of the U.S.P., which is preferable on the whole to that of the present B.P.

Sodium Hypophosphite, $NaPH_2O_2$.—5 c.c. of a 5-per-cent. solution should yield with one drop AmHS no colour or turbidity (absence of metallic impurities). 5 c.c. of a 5-per-cent. solution with 1 c.c. $Am_2C_2O_4$ solution and 1 c.c. acetic acid should yield no more than a slight opalescence (limit of Ca). 5 c.c. of a 5 per cent. solution with 1 c.c. $BaCl_2$ solution and 1 c.c. HCl, and boiled for two minutes, should yield no precipitate (limit of sulphate). 5 c.c. boiled for five minutes with 5 c.c. HNO_3, and then 1 c.c. $AgNO_3$ solution added and again boiled for five minutes, should yield no turbidity (absence of chloride). 5 c.c. mixed with 5 c.c. magnesia mixture, and well shaken, should yield no precipitate (limit of phosphate). 1 gramme of the dried salt dissolved in water, to which is added 0·5 c.c. of $\frac{n}{10}$ H_2SO_4 and one drop of phenolphthalein, should remain colourless (limit of carbonate = 0·2 per cent.). When analysed as before described should yield 96 per cent of sodium hypophosphite.

A simple test which could be used would be the following:—"To 1 gramme of the dried salt, dissolved in 10 c.c. of water, add 9 c.c. of a 1-per-cent. solution of lead acetate; allow the mixture to stand for half an hour, and filter. On adding lead acetate to the filtrate the liquid should remain quite clear." This corresponds to about 96 per cent. of pure sodium hypophosphite.

The following are the factors necessary in making analyses by these methods and the corresponding logarithms, these being based on the atomic weights of Meyer and Seubert:—

Salt	M. Wt.	$Mg_2P_2O_7$		1 c.c. Uran. Sol. = ·005 P_2O_5	
		Factor	L. Factor	= grms.	L. grms.
Sodium hypophosphite ...	87·88	0·79085	$\bar{1}$·89810	0·0062	$\bar{3}$·79246
Potassium hypophosphite ...	103·91	0·9351	$\bar{1}$·97087	0·0072	$\bar{3}$·86523
Calcium hypophosphite ...	169·67	0·76346	$\bar{1}$·88279	0·006	$\bar{3}$·77714
Barium hypophosphite ...	266·66	1·11999	0·07914	0·0094	$\bar{3}$·97350
Manganese hypophosphite (hydrated) ...	202·52	0·9113	$\bar{1}$·95965	0·0071	$\bar{3}$·85401
Ferric hypophosphite	501·04	0·7515	$\bar{1}$·87593	0·0077	$\bar{3}$·77029
Ferrous hypophosphite ...	185·64	0·8353	$\bar{1}$·92185	0·0065	$\bar{3}$·81621
Hypophosphorous acid	65·88	0·5929	$\bar{1}$·77297	0·0046	$\bar{3}$·66732
Anhydrous Mn $(PH_2O_2)_2$ ...	184·56	0·83045	$\bar{1}$·91932	0·0065	$\bar{3}$·81368

Discussion.

The **President** said the paper was a most valuable one, and he hoped the lead-acetate method would get due consideration by pharmacists.

Mr. **W. A. H. Naylor** asked if Dr. Jowett could give any information about the presence of hypophosphates in hypophosphites. The hypophosphates were extremely difficult to prepare, and, indeed, could not be obtained in this country.

Mr. **F. C. J. Bird** said he would like to know if Dr. Jowett had tried the method of making ferrous hypophosphite by reaction with barium hypophosphite and ferrous sulphate. He would also like to know what strength of nitric acid Dr. Jowett used in oxidising the sodium hypophosphite. He also wished informing if lead sulphite is quite insoluble, as it might affect the results if at all soluble. The paper marked a great advance on our knowledge of pure hypophosphites, which hitherto have not been easily prepared.

Mr. **George Lunan** asked if any attempt had been made to prepare hydrogen hypophosphite. Mr. Tyrer had shown that nascent barium hypophosphite could be split up with formation of hypophosphorous acid, and he wondered if Dr. Jowett had corroborated this.

Dr. **Jowett**, in reply, said he had no information to give on the hypophosphates. A slight solubility of lead sulphite would not interfere with the magnesia-mixture reaction.

11 24. The next paper read was a

Note on the Basicity of Quinine.

By David Howard and D. Lloyd Howard.

[A reply to a Blue-list question.]

The question suggested for consideration by the Conference as to the basicity of quinine is somewhat difficult to answer, as theoretical consideration would lead to a different conclusion from that shown by the use of indicators in volumetric testing.

Everything points to the conclusion that the alkaloid is a "diammonia," to use an expressive if somewhat antiquated nomenclature; that each of the nitrogen atoms of the molecule represents a basic nucleus, one of which is much more powerful than the other.

This is shown by the action of ethyl or methyl iodide or bromide, which very readily give a monethyl or monomethyl base, and with more difficulty a diethyl or dimethyl base.

The formation of quinine salts points to the same conclusion. Sulphuric acid will form three definite crystalline salts, one molecule combining with one molecule of quinine to form the ordinary sulphate of quinine of commerce, with one molecule to form the "soluble sulphate" of commerce or two molecules of acid will combine with one molecule of quinine to form the little-known "tetrasulphate." Similarly the monobasic acids — hydrochloric, hydrobromic, and hydriodic—form definite crystalline salts, with both one and with two molecules of acid to one of the alkaloid.

Whether the "soluble sulphate" should be regarded as forming a hydric sulphate of the stronger basic nucleus or a neutral sulphate of the "diammonium" must be a matter of opinion, but the tetrasulphate and the acid halogen salts can hardly be regarded otherwise than as the hydric sulphate or the haloid salt of the fully-saturated base.

The French chemists have always consistently regarded the "soluble sulphate" as the "neutral sulphate," and the sulphate of commerce as the "disulphate," and similarly they speak of the soluble hydrochlorated as the "neutral" salt, and the ordinary hydrochlorate as "basic."

This nomenclature frequently leads to confusion, especially to those who do not recognise the old rule of nomenclature, now rarely observed, that gives opposite meanings to the Latin and Greek prefixes. We are careful enough to remember that a kilogramme is one thousand grammes, and that a millegramme is one thousandth of a gramme, but we continually find that a disulphate is supposed to be identical with a bisulphate instead of being a basic sulphate, and the exact opposite of a bisulphate. No doubt the risk of this mistake has led to the disuse of the old name "trisnitrate of bismuth" for the ordinary subnitrate of the metal.

If, however, we study the salts of quinine by means of the ordinary tests for acidity, we shall arrive at a very different conclusion. Of course colour indications only show the balance of affinity for an acid or an alkali, as the case may be, of the coloured body. The change from blue to red with litmus only shows that a free acid has turned the red acid out of its combination with an alkali, and the uncertainty of the change with weak acid is evidence of so slight a preponderance of strength that it requires a marked excess to break up the blue salt. This balance of acid strength may be very much affected by temperature and dilution at a weak temperature and dilution. In a weak and cold solution boracic acid has no acid reaction, and borax has been recommended as a means of standardising solutions of test-acids. If, however, the borax solution be hot and strong, the boracic acid shows a very distinct though indeterminate acid reaction. A colour reaction, therefore, can only show the relative strength of the affinities of the reagents in determining the reaction which causes a change of colour.

As is shown in the paper referred to in the question (*Year-book of Pharmacy*, 1894, folio 344), this power of the vegetable alkaloids to bring about a colour reaction varies very greatly.

Phenolphthalein gives no indication of the presence of quinine. The acid in a salt may be titrated as if no alkaloid were present.

With litmus as an indicator the point of the formation of the older officinal salt is very well defined. The reaction is almost as well marked as in the case of the formation of the neutral salt of an alkali, and thus, as far as indicators go, the sulphate of quinine of the British, American, German, and most other Pharmacopœias is undoubtedly a neutral salt.

No indicator appears to show the formation of the soluble salt with any degree of certainty. Litmus gives no indication at all, not even the indefinite change to purple caused by the formation of a bicarbonate, and thus the expression "neutral" salt in the French sense expresses a theoretic expression of its composition, and not the result of any colorometric testing, and it is certainly very desirable to avoid an expression which very often proves very misleading.

With methylorange the indicators are very indefinite; the neutral point is approximately the soluble sulphate. Messrs. Farr and Wright, in their paper on the titration of alkaloids, speak of the end reaction in an alcoholic solution as almost unobservable, but state that in several instances the results obtained by titration were exactly twice as great as those claimed by weighing.

The curious effect of sulphuric acid in increasing the specific rotation of polarised light by solutions of quinine also point to a marked difference in constitution in the different sulphates. Dr. Hess (*Year-book of Pharmacy*, page 144, 1874) gives the rotation of quinine a.j. −166 of sulphate of quinine in alcohol as a j. 220′ 4″; of soluble sulphate he found the rotation for the contained quinine a.j. −264′ 3″, with 7½ equivalents acid −264′ 7″, but with still greater excess the rotation of the dissolved quinine may reach a j. −287′ 60″.

It is curious to note that the maximum rotation is not reached immediately on the addition of the excess of acid, but only after the lapse of something pointing to a slow formation of the tetrasulphate in the comparatively dilute solutions used.

These results point to the existence in solution of the three crystalline salts, but it would seem that owing to some measure of dissociation in the solution an excess of acid must be present to keep the tetrasulphate in solution.

Whatever theoretic conclusions we may form as to the composition of the salts of quinine, there is no doubt of the convenience of the nomenclature adopted by the British, German, American, Dutch, and most other Pharmacopœias, which regard the familiar sulphate as neutral, and the soluble sulphate as a bisulphate; but in foreign commerce we must always be on our guard against confusion arising from the French nomenclature, to guard against which the Italian Pharmacopœia gives us the following remarkable trio of synonyms:—Bisolphato de chinino, solfato acido de chinino, solphato neutro de chinino.

Discussion.

The President said they were all obliged to Mr. Howard for taking up the subject, and thus clearing off one of the questions from the Blue-list. He wished all members would do something towards clearing off some of the questions, so that they could add more new ones. As they well knew, the author was a great authority on the subject of quinine. It was one which was largely his own.

Mr. Brodie thought it would be advisable to codify the various opinions on the basicity of quinine.

Mr. Lloyd Howard, in reply, said it was no doubt desirable to codify the literature of quinine. It was, as they all knew, very extensive, and would be more than a note. (Laughter.)

The President, in proposing a vote of thanks, said Mr. Howard's remarks almost amounted to a promise.

Note on the Mydriatic Alkaloids.

By H. A. D. Jowett, D.Sc.

That some confusion should have arisen in the past regarding this group of alkaloids is not altogether surprising, considering that there was on the market a variety of products designated daturine, duboisine, heavy and light atropine, &c., and that the literature of the subject was in a most unsatisfactory condition. The work of Schmidt and others has, however, removed these discrepancies, and it is now possible to obtain in commerce products of definite chemical composition of a high degree of purity. A paper read by Dr. G. Sharp at last year's Conference (*Ph. J.*, 1897, page 160) contained several statements and conclusions which are not in accord with our present knowledge of this subject, and in the 1898 B.P. the description and tests of the official members of this group are generally unsatisfactory, and in some cases misleading and inaccurate. I therefore thought that it would not be without interest to the members to contribute a short note on the subject.

As Dr. Sharp says, the several names which have been used for a mixture of these alkaloids—as daturine, duboisine, light atropine, &c.—should be once and for all abandoned, as they only represent a variable product obtained from a particular plant (the composition of the product depending on the process of manufacture), but consisting chiefly of atropine or hyoscyamine. The only alkaloids belonging to this group which can at present be definitely considered as chemical entities are atropine, hyoscyamine, and scopolamine. These are bodies of definite composition, whose chemical and physical properties have been carefully studied. In addition to these bases, pseudo-hyoscyamine from *Duboisia myoporoides*, isomeric with atropine and hyoscyamine, has been described by Merck, but its relation to its isomers has not yet been worked out.

Atropine.—Atropine can be prepared either synthetically from tropine and tropic acid by the elimination of water, or by isomeric change from hyoscyamine. The alkaloid contained in belladonna-root and other solanaceous plants is primarily hyoscyamine, which, during the processes of extraction, precipitation, &c., becomes converted into atropine by the action of the heat and alkali used. Atropine itself is present in only a very small amount, if at all, in these plants. Dr. Sharp states that "the relationship of these two bases can hardly be said to be understood"; but this statement requires a little modification. Though the nature of the isomerism of these two bases is not at present known, their properties are such as to differentiate them sharply from each other, and it is certainly within the ability of the chemist to detect these differences.

The best and simplest test for determining the freedom of atropine from hyoscyamine or scopolamine is its optical inactivity, both the other bases and their salts being optically active. The presence of a small amount of these likely impurities would thus be at once detected. The new B.P. in the tests for atropine and the sulphate makes no mention of this fact, but it is stated amongst the characters and tests of aconitine that it is dextro-rotatory, which is perfectly true; but the object of this statement is not apparent, as this property is no test of either its identity or purity. Beyond the melting-points the B.P. gives no test for the presence of organic impurities in atropine or its sulphate. That of the base (115·5°) is correct for a pure product, but that given for the sulphate (183°) is open to criticism. Will (Ber. 21, page 1724) gives it as 196°; the U.S.P., 187°; Hesse (A. 271, page 102), 180°–181°; Merck, 189°–191°; whilst a salt, proved to be optically inactive, prepared by myself from pure atropine, melted at 190°. A good commercial specimen melted at 190°, so that there is no doubt that the B.P. melting-point is too low.

The sulphate can always be obtained quite white, but has generally an amorphous appearance though really crystalline, and here, again, the pharmacopœial description requires modification. The melting-points of the aurichlorides of this group form a very easy way of identifying the alkaloid, and also afford some criteria as to its purity. The B.P. recognises these salts and gives the melting-point for scopolamine aurichloride but, by a strange inconsistency, not those of atropine and hyoscyamine, where it relies on the appearance of the salt—of which, again, a misleading account is given. They are best prepared by dissolving the base in excess of hydrochloric acid, then adding auric chloride, and crystallising from the hot solution. The B.P. gives an impracticable method of preparing it from an aqueous solution of atropine. The appearance of the two salts is very characteristic; the atropine aurichloride separates first as an oily clot which solidifies to a crystalline mass; the hyoscyamine salt comes down in brilliant golden-yellow crystals. The melting-points are very sharp, and are separated by 23°. Atropine aurichloride melts at 137°, and hyoscyamine aurichloride at 160°. The B.P., therefore, requires in this respect amendment and addition. The insertion of the colour-test with fuming nitric acid and potash is quite unnecessary, and as tests for identity and purity of the base and salts I would suggest—

(1) Melting-point.
(2) Formation and melting-point of the aurichloride.
(3) Optical inactivity.
(4) Freedom from ash on ignition.

These tests would ensure a pure product, and one which can reasonably be expected from the manufacturer.

Hyoscyamine.—This base is actually found in many solanaceous plants, including belladonna, scopola, &c., and not "possibly," as the B.P. states. It is optically active, and can be converted quantitatively by heat or by treatment with alkali into atropine. It is not, however, only an optical isomer of atropine, as lævo-atropine has been prepared synthetically and is not identical with hyoscyamine. It is distinguished from atropine by its optical activity and by the melting-point of its aurichloride (160°). The melting-point of the sulphate as it occurs in commerce is about 200°, whilst I have found the pure salt to melt at 204°, and not, as stated in the B.P., at 206°. I would suggest a melting-point of not lower than 200°.

Scopolamine (Hyoscine).—This base is found accompanying hyoscyamine in very small quantity (0·03 per cent.) in many solanaceous plants, its chief source being *Scopola atropoides*. It is distinguished from both atropine and hyoscyamine by several well-marked characteristics, the most important of which are its percentage composition, its products of hydrolysis, and the melting-points of its salts, particularly the aurichloride. Lately Schmidt has shown that it exists in stereoisomeric forms, differing in optical activity and slightly in melting-points, but not in their physiological action.

It is identical with the base called hyoscine, prepared from hyoscyamus-seed; but this is not the source of the commercial article, which is preferably called "scopolamine." This question has, however, been very recently discussed by Schmidt, Hesse, and Merck, and may be considered satisfactorily settled.

The characters and tests given for the hydrobromide in the B.P. are very unsatisfactory.

The solubility in water (1 in 1) is incorrect. The U.S.P. gave 1 in 1·9, and Hesse gives 1 in 4, which is more correct. The hydrated salt, when heated in a capillary tube to 100°, forms a clear liquid, and no alteration can be observed on further heating to 181° (the melting-point of the dehydrated salt). The statement in the B.P., therefore, is somewhat misleading.

The melting-point of the dehydrated salt as there given (193°–194°) requires modification. According to Schmidt (*Arch. Ph.* 236, pp. 47 *et seq.*) the scopolamine hydrobromide of commerce consists of a varying mixture of lævo (or normal) and inactive scopolamine, in proportions dependent on the source of the alkaloid and the mode of manufacture. The commercial salt has a specific rotatory power of about −13°, and melts at 181°. The purified lævo-salt melts at 193°, and the inactive modification at 180°; but it has been shown that there is no difference in the physiological action of these salts. The tests and characters of the official salt should, therefore, be given for the pure product as it appears in commerce. which is a mixture of the stereoisomers melting at 181°. This is the melting-point given by Hesse and confirmed by my own experiments. It would be interesting to know if the compilers of these tests have met with a salt in commerce of the melting-point given (193°–194°).

With auric chloride the salt is stated to give a crystalline salt melting at 198°, which is not correct. As I have previously shown (*J. C. S.*, 1897, page 679), an additive compound is formed under these conditions of the formula $B.HBr.AuCl_3$, which melts at 215°. The aurichloride, when prepared in the usual manner, melts sharply at 198°, thus differentiating it from atropine and hyoscyamine. There does not seem to be any reason why the salt should not be neutral to litmus, as a properly-prepared salt will conform to this condition. The statements of Dr. Sharp regarding hyoscine and scopolamine show that he has confused these bases, but if the investigations made in recent years be considered, it will be found that our knowledge of this group of alkaloids is quite definite and satisfactory.

Discussion.

11.34. The **President** said the paper was a very interesting one. It was just one of those papers which showed what an advantage it would be if the Pharmacopœia Committee issued proofs of their work for revision by pharmacists. Little points like this would then be satisfactorily settled.

Mr. W. **Martindale** said there was such a mass of conflicting evidence on the mydriatic alkaloids that it was difficult to know which view to take. He had found that the amorphous sulphate of atropine was only apparently so; it was in reality distinctly crystalline when examined. When such great authorities as Bill, Hesse, Ladenburg, and Merck disagreed they could hardly expect the British Pharmacopœia to come to any conclusions

Mr. **Siebold** said the Conference would remember that last year a paper, by Dr. Sharp, on "Our Present Knowledge of the Mydriatic Alkaloids" was read. He (Mr. Siebold) did not know which interpretation they could place on the word "our"—(laughter)—whether the author spoke of knowledge generally or his own particularly. He was inclined to think that it was the latter. (Laughter.) Dr. Sharp did not show knowledge of the latest advances in the subject. Apart from that, Mr. Siebold wished to throw light on what was an obscure and vague point—viz., the confusion of hyoscine and scopolamine. The matter appeared to him to be in a nutshell; Hesse, when he spoke of hyoscine, and Schmidt, when he spoke of scopolamine, were really speaking of the same alkaloid. When it was found that hyoscine did not exist in henbane-seed, the name still clung to the substance of the formula assigned to hyoscine, and which was found to be identical with scopolamine. Merck recognised the absolute identity of the alkaloids; with him hyoscine and scopolamine are different only in name. There was an alkaloid accompanying scopolamine made from *Scopola*, which is characterised by optical inactivity, and had been called atroscine. Some investigators contended that this was merely an altered scopolamine, but the difference was physiological as well as optical.

The **President** said, in regard to the definition of "our," he thought it meant the author's own knowledge, and not the knowledge of the whole Conference, before which the paper was read.

The rest of the time from 11.56 A.M. to the luncheon-adjournment was devoted to the following six papers on pharmacopœial matters:—

Pharmacists and the Pharmacopœia.

By Peter MacEwan, F.C.S.

Why should British pharmacists trouble about the British Pharmacopœia as we are doing now? The State does not recognise us as fit and proper persons to entrust with the publication of the work, and the General Medical Council, which is so honoured, has not been too eager to take counsel with the representatives of pharmacy in regard to its preparation.

There are few greater anomalies in this country than the British Pharmacopœia. It may first be noted that, although the General Medical Council is by the Medical Acts of 1858 and 1862 constituted the publishers of the book, the Legislature has been careful to give instructions in such wide terms that the Council is not compelled to prepare the work, but "shall cause to be altered, amended, and republished such Pharmacopœia as often as they shall deem it necessary." Under this provision the Medical Council has since the first British Pharmacopœia was published excluded any but its own members from final decisions upon what should and what should not be included in the British Pharmacopœia; so that pharmacists, who are best qualified to decide upon pharmaceutical matters, and to whom pharmaceutical standards are of commercial as well as professional interest, have practically no voice in the decisions.

Secondly, it may be noted that the publishers of the book seem to lack organisation for continuous revision—in fact, until they appointed a pharmacist, Dr. John Attfield, as a reporter, there was no provision by the Council for watching the progress of pharmacy and medical treatment so far as such progress affected the Pharmacopœia.

In the third place, it may be taken as a fact that the new British Pharmacopœia is chiefly or essentially the work of pharmacists who were appointed by the Pharmaceutical Society of Great Britain to assist the publishers. They did their work well, but the author understood that these workers were in such an unsatisfactory position that they could never be sure that their expert opinions would be accepted as final. Which is the greatest anomaly of the whole matter.

In France, Germany, and the United States the compilation of the national Pharmacopœias is entrusted to representative committees of medical men and pharmacists, with associate helpers. None of these countries, however, strictly compares with our own. In France the Government of the day selects the committee of revision, placing upon it men of all interests—medicine, pharmacy, chemistry, and botany—but the burden of the work and the greater part of the honour of revising the Codex falls upon the pharmaceutical representatives. The conditions are almost similar in Germany, the Arzneibuch Commission being appointed by the Emperor; and here, again, medicine, pharmacy, and chemistry are represented, and veterinary surgery is also recognised. In the United States matters are different. The Pharmacopœia of that country is practically a private publication; its authority is like that of our "Unofficial Formulary"—it is tacitly recognised as an authority, but is not by Statute a compulsory standard, although each State in the Union may so decree it in its Legislature.

In spite of its unsatisfactory recognition the United States Pharmacopœia is revised in a manner little short of perfect. Once every ten years all medical and pharmaceutical associations in the Union send delegates to a Convention held in Washington. The Convention appoints a committee to revise the work. The Nation is recognised by the appointment of representatives of the Army and Navy Medical Services. As constituted the committee represents all directly interested, but in practice the work is done by pharmacists, some of whom, however, hold medical qualifications. With the publication of a new edition the work of the committee does not end. This committee is so largely composed of leaders from our kindred body, the American Pharmaceutical Association, that year by year preparation for revision goes on by research committees, individual work, and reports on special subjects which small committees have been appointed to consider. The details of the scheme are of great interest, but it would be out of place to epitomise them now. Suffice it to say they embrace consideration of every branch of the current literature of the world connected with a Pharmacopœia, and research on criticisms directly affecting the existing work. Be it noted that all this is done without statutory obligation. The committee are the publishers of the work, and the revenue obtained from it pays the out-of-pocket expenses.

Is it possible for British pharmacists to do something on similar lines? At present, year by year, an immense amount of work is done in our country which bears upon Pharmacopœia revision, and, saving the annual report to the Medical Council, which is a clever piece of literary craftsmanship, there is no adequate means of utilising this work. The Pharmaceutical Societies cannot be expected to look after such things, because their functions are becoming more and more concentrated upon the administrative side of pharmacy. The author suggested that the British Pharmaceutical Conference should take the matter up. It represents the British Empire—England and Wales, Ireland, Scotland, Canada, India, and the colonies. Its object is to improve the practice of pharmacy. It is free from the burden of Acts of Parliament, and especially of official red-tape. It has already in the Formulary Committee given evidence of its ability in Pharmacopœia pioneering. It only requires to reorganise the committee to make it suit the purpose. It should be representative—

> Firstly, of the more important centres in the three kingdoms, preferably through local pharmaceutical associations.
>
> Secondly, of the Pharmaceutical Societies of Great Britain and Ireland.
>
> Thirdly, of every pharmaceutical association and society of interest in Canada, India, and the colonies.

This would form a grand committee equivalent to the American Convention. From it would be appointed a smaller working committee, whose suggestions would be submitted to and voted upon by the grand committee before recommendation to the Conference, with reservations in regard to matters requiring expeditious decision.

The working committee's duties can better be imagined than described. It should be so constituted and have such powers that the director of it should be able to freely instruct or correspond with his colleagues regarding any B.P. subject. It should secure the co-operation of the Pharmaceutical Research Laboratory, and of any similar institution in the kingdom or abroad. There is much assistance latent in the senior pupils of schools of pharmacy, in the laboratories of wholesale houses, and in our university colleges, apart from which there are many young pharmacists who would be only too thankful to apply to a central authority for work to do, if they knew their assistance would be welcomed. It will have been noticed that the progress of pharmacy is made by potential examiners, who too frequently retire into their scientific coffins when they receive their appointments.

If a scheme of revision such as here outlined were carried out, new life would be infused into the Conference, and pabulum for the discussions would never be lacking. Beyond which it might be possible for the Conference to publish a more comprehensive work than the "Formulary"—one rivalling the British Pharmacopœia itself; and, should the time ever come when pharmacists will obtain statutory recognition as revisers of the Pharmacopœia, the organisation for the work would be ready.

Finally, pharmacists may well consider whether it is to their advantage to give their services under the present law so humbly to the General Medical Council as they do. The author understands that the Council claims that it must adhere to the statute, and that it may not delegate its powers to pharmacists. True, but as the assistance which pharmacists have hitherto given is legal, it would be quite as legal for the Council to give the representatives of pharmacy voting-power in the preparation of the work and remuneration for expenses incurred. Perhaps the Pharmaceutical Societies could not insist upon this, since there is a kind of brotherhood between all official executive bodies, but the Societies could say to the Medical Council, "Gentlemen, like yourselves, we have many executive functions to perform, and these practical pharmaceutical investigations which you suggest to us are not in our direct line of work; but the British Pharmaceutical Conference has had a Pharmacopœia Committee working for some time; we are represented upon it. Better try the B.P.C." The Conference would be able to state its terms, and if these were not agreeable to the Medical Council, then let the Council itself carry out its statutory duties without pharmaceutical assistance.

THE GALENICAL PHARMACY OF THE 1893 PHARMACOPŒIA.

By F. C. J. Bird.

The storm of adverse criticism which greeted the appearance of the last Pharmacopœia in September, 1885, affords a striking contrast to the comparatively mild protests against alleged defects in the formulæ and processes of the present volume which have as yet appeared Nor on this occasion has it been found necessary to mar the reputation of the Pharmacopœia by the publication of a lengthy list of errors and corrections—ample evidence of the greater care and more practical knowledge brought to bear upon the compilation. Processes devised in the experimental laboratory, or at the working-bench of the retail pharmacy, must be based on thoroughly sound principles if they are to successfully pass through the ordeal of manipulation on the manufacturing scale—the true test of perfection in any process. Shortcomings in an official formula may, when small quantities are concerned, usually be compensated for by dexterous manipulation, but as soon as grammes give place to kilos. any error becomes highly magnified, and the difficulty of successfully carrying out the operation enormously increased.

Sufficient time has now elapsed for exhaustive trials of the new and altered official formulæ, and the fact that so few serious faults have been discovered completely raises the labours of the compilers above that reproach of "easy-chair work" which was thrown, perhaps not quite undeservedly, at the last edition of the Pharmacopœia.

The objects of the present short paper are to briefly convey a general idea of the influence which the galenic pharmacy of the new Pharmacopœia has had upon the work of the manufacturing laboratory, and more particularly to elicit the experience and views of fellow-workers, from the retail standpoint, in the useful discussion which, I trust, will follow.

Two apparently incompatible incentives are ever present to those who have control of commercial laboratories—viz., excellence of product combined with economy of production. Even a Pharmacopœia cannot afford to neglect these indispensable elements of successful work, and that this has been recognised is evidenced by the fact that some of the most rational and useful of the alterations in official processes are based on the practice of the manufacturing laboratory.

A somewhat revolutionary principle is involved in the omission of a detailed description of processes which can only be conveniently and economically carried out on the large scale. Not so many years ago the man who not only guaranteed the preparations on which his reputation depended, but actually made them himself, was alone considered to be a pharmacist in the highest sense of the word. But as extremes of all kinds are generally bad, the conviction has forced itself upon us that too strict an adherence to the hard-and-fast lines of ideal pharmacy is fraught with disadvantage. Specialism and division of labour are the tendencies of the age; the conservatism of pharmacy has long and stubbornly struggled against their influence; but the pages of the new Pharmacopœia reflect the result of the unequal contest. The pharmacist of to-day is by education and training in a position to guarantee the quality of the chemicals and preparations which he vends. Not that he necessarily has made them himself—the traditional pharmacist of a previous generation may have done so—but with confidence in the source of those preparations which he does not manufacture, supplemented by his own practical knowledge, he may without diffidence take the full responsibility of his wares and continue to occupy that honourable position in the community to which he is justly entitled.

Concentrated infusions, the horror of the pharmaceutic purist and the theme of many a solemn admonition to the younger generation, have at length insinuated themselves within the pages of our official guide, under the guise of *Liquores Concentrati.* Nor, on reflection, does it seem unreasonable that the same skill and perception of the idiosyncrasies of a particular drug under treatment which enable the pharmacist to prepare a perfect tincture or liquid extract should also aid him to solve under somewhat different conditions a similar pharmaceutical problem.

Uniformity is a dominating idea in the revised Pharmacopœia. The greater precision of language and more accurate definition adopted are welcomed in the laboratory, and will do much to prevent that undesirable variation in the physical character of the product of a given formula emanating from different laboratories which is always likely to occur when the wording of that formula permits of too much latitude in its interpretation.

It will not be possible, in the limited space at my disposal, to do more than cursorily glance at the more important classes of galenicals, and indicate the direction in which they have been affected by official alterations.

EXTRACTA.—The new and altered extracts are, on the whole, a greatly-improved class of preparations. Chief amongst them must be mentioned.

Ext Cascar. Sag. Liq, the formula of which is in every way an advance on that of 1885. By the new method the bark is completely exhausted (boiling water removes less than ½ per cent. of tasteless extractive from the marc), and the tedious filtration necessary in the old process can now be dispensed with. The addition of the alcohol throws down an almost negligible precipitate, especially if the aqueous liquid has been carefully decanted before the final evaporation; and, considering the enormous demand and large scale on which this preparation is made, the new process comes as a boon to the laboratory-worker.

Ext. Belladonnæ Alcoholic., whilst now possessing the advantage of a standard strength in alkaloid, cannot be regarded as a perfect galenical—in fact, as far as physical appearance is concerned, its claim to the designation of extract is not apparent. If made sufficiently soft to be of a pilular consistence, hardening occurs at the surface, with consequent variation in potency. Evidently a modified and more suitable diluent is a desideratum.

Ext. Belladonnæ Liq.—At the Oxford meeting of the Conference it was suggested that repercolation might advantageously be adopted as an official process, and this is one of the instances in which the compilers of the Pharmacopœia have considered it applicable. Complete exhaustion of the belladonna-root must not be expected by the process as written, for the condensation of the active principles of 2 lbs. of belladonna root in 12½ fl. oz. of product by following the official directions would tax the ingenuity of the most skilful operator. But the application of heat, which is so detrimental to the colour of the extract, is avoided, and it is always open to the pharmacist to continue percolation (as is usually done) with more menstruum to exhaustion, the weaker fractions being reserved for use in a subsequent operation. Repercolation gives excellent results with ext. sarsæ liq.; it might also have been extended to ext. cocci liq. and ext. pareiræ liq.

Ext. Ergotæ.—Ergotin, 1885, was unsatisfactory on account of the indefinite expression "syrupy consistence," which occurred in the formula. Just according to the construction placed upon that expression, so the yield, and presumably the activity, of the product varied; but such a fault is avoided in the new process, which apparently leaves little to be desired.

One of the greatest improvements from a laboratory point of view has been effected in the formula for *Ext. Glycyrrhizæ Liq.* Made in the old way it was a constant source of trouble; for not only might the undecorticated root be employed for the 1885 preparation (to the detriment of its flavour and sweetness), but the proportion of rectified spirit was quite insufficient to prevent fermentation in hot weather, so that it was absolutely necessary to depart from the literal directions of the Pharmacopœia, and evaporate to a higher gravity in order to admit an increased proportion of spirit without interfering with the volume of the product. These faults have now been corrected, and the present formula is an admirable one.

Ext. Nucis Vom.—Standardisation with sugar of milk appears to be successful in this case, as, unlike ext. bellad. alc., there is sufficient evaporated liquid to take up the sugar of milk, and at the same time retain the physical characters of an extract.

Ext. Nucis Vom. Liq.—Here repercolation is inferior to the official method, the whole of the alkaloids being with difficulty removed from the seeds by solvent which is already partly saturated with extractive matter. Percolation with fresh solvent and distillation as directed easily produce an extract of full strength.

Ext. Ipecacuanhæ Liq.—The intention of the compilers was presumably to make this a 1-in-1 preparation, but the alkaloidal standard fixed upon (2·25 per cent.) rarely admits of 16 fl. oz. of extract being obtained from 1 lb. of root.

Ext. Pareiræ Liq.—In spite of considerable criticism, this process has proved a workable one, and the extract deposits less than formerly. But repercolation would probably have been more suitable, as already mentioned.

The more frequent instruction to "evaporate to dryness" and the introduction of extracts reduced to powder with sugar of milk is a distinct advance in the direction of uniformity, for the operator is now relieved of all doubt as to the meaning of such indefinite expressions as "suitable consistence," "consistence for forming pills," "soft extract," &c., which were of common occurrence in the last Pharmacopœia.

LIQUORES.—The *Liquores Concentrati* rank foremost in interest amongst the numerous additions to this class. Their insertion marks a change in the official attitude which by many has long been regarded as inevitable, for they are introduced as "the result of many experiments made with the object of preparing decoctions and infusions in a highly concentrated state, which should resemble the liquids termed by manufacturers 'concentrated infusions and decoctions.'" The methods given for the preparation of these liquors, although perhaps not so perfect as those followed commercially in the manufacture of concentrated infusions, are on the whole successful, sarsæ co., senegæ, and quassiæ being amongst the best. Some are deficient in keeping-properties, and in those formulæ constructed on the model of liq. chiratæ conc. it would seem to be more in accordance with the accepted principles of percolation to direct "that the marc be kept covered with menstruum and that the percolate be allowed to flow regularly at such a rate that the whole operation may extend over eight days." Considerable doubt exists as to the manner in which the compilers of the Pharmacopœia intend the liquores concentrati to be employed. May I suggest that the idea in their minds was that a medical man, when writing a prescription, would order the official dose of a liquor in place of the corresponding fresh infusion?—and I think this view is supported by the statement in the preface that "the preducts of their dilution may be prescribed by practitioners in place of the corresponding official infusion." Naturally in a mixture "aquæ ad" would give the product of their dilution. Used in this way the liquores concentrati would neither interfere with the fresh infusion nor its concentrated representative.

Liq. Calumbæ Conc.—Calumba-root is in this formula directed to be twice macerated and pressed with given quantities of distilled water, the expressed liquids being afterwards heated to 180° F. and mixed with alcohol. The quantity of expressed liquid obtained from a drug like calumba depends on the power of the press; hence an element of uncertainty exists which is likely to cause variation in the product. This could have been minimised by directing sufficient water to be taken for the second maceration to furnish a definite volume of expressed liquid.

Liq. Sennæ Conc.—The product of this formula does not usually measure 1 pint, as evaporation during the heating of the liquid, precipitation by the alcohol, and absorption by the filter together tend to make the loss in volume more than the ½ oz. allowed. If the liquid, after heating, were made up to 16 fl. oz., and the well-drained filter washed, if necessary, with 20-per-cent. alcohol to 20 fl oz. product, greater uniformity would be ensured.

Liq. Thyroidei is the herald of a new series of preparations which are probably destined to find a permanent place in future editions of the Pharmacopœia. Scrupulous cleanliness and perfectly fresh and healthy glands, free from cysts, are absolutely essential for the preparation of a reliable thyroid solution; in other respects the process presents no difficulty if the official directions are closely followed. Half-per-cent. phenol solution is conjunction with glycerin, is used as a preservative, but it is doubtful whether this is the most efficient that could have been employed.

SPIRITUS.—The process for *Spt. Ætheris Co.* involves the distillation of a mixture of alcohol and sulphuric acid at a high temperature. Few ordinary pharmacists, unless possessing special facilities, would undertake the risk of this operation, and under the circumstances a modified formula embracing an outline process, with characters and tests for oil of wine, and directions for its solution in spirit and ether, would have been preferable.

Spt. Æther. Nit.—Deficiency of product due to loss of nitrous ether in the old process is now avoided by placing a portion of the alcohol in the receiver in order to absorb any ethereal vapour which may have escaped condensation. A better yield is thus secured, which may still further be increased by conducting the distillation under slight pressure, as advised some years ago by Mr. E. H. Farr. The apparatus (all joints of which must be quite airtight) is set up as usual, but a tube, led from the receiver, is made to dip under the surface of mercury to an extent dependent on the pressure which the retort, &c., will safely stand.

Spt. Rectificatus.—The change in the strengths of the official alcohols is the most important and far-reaching of any that have affected the characters of the galenical preparations of the new Pharmacopœia. He must confess to not sharing the regret with which the disappearance of proof spirit has been viewed in some quarters. As long as the word "proof" remained on the official page there was always an inducement to use it as a standard of alcoholic strength, but its removal has cleared the way for the more rational, scientific, and infinitely more convenient centisimal system happily now adopted. Long custom and daily contact have rendered the proof standard indispensable to the British Excise, but for pharmaceutical purposes the new method of expressing alcoholic strength has all those advantages over the old which metric possess when compared with avoirdupois weights. Forty or 50 over proof spirit is meaningless to the average mind as an expression of alcoholic strength, whilst the term 40 or 50 per cent. alcohol at once calls up a tangible idea of relative alcoholic value. The ease with which volume percentage has displaced proof degrees in the routine of the laboratory is surprising, and the compilers of the Pharmacopœia are to be congratulated on having so boldly departed from the beaten track by authorising a system both convenient to work with and widely acceptable. Mixture by weight, where liquids are concerned, is not the general rule of the Pharmacopœia. There are, however, instances in which it has been thought desirable to order liquids in parts by weight; for example, the liquid ingredients of the ointments. This principle, which is particularly applicable when rise of temperature is a consequence of the act of mixing, might, with the view of increasing the usefulness of the formulæ, have been extended to the diluted alcohols and to certain of the diluted acids, for it is obvious that (the components of those mixtures having to be measured at 15.5° C. and the final volume adjusted at that temperature) mixture by weight is in such cases both quicker and more accurate.

SYRUPI.—Keen disappointment has been felt at the absence of *Syr. Ferri Phosph. Co.* and *Syr. Hypophosph. Co.* These two syrups are manufactured in enormous quantities, but as all makers do not follow the B.P.C. Formulary there is great variation, and authoritative processes for their preparation were eminently desirable. *Syr. Aurantii* is improved in flavour by the tincture of fresh peel now used. *Syr. Ferri Iodid.* has changed for the better in several respects. The useless and detrimental boiling together of syrup and ferrous-iodide solution is omitted; the loss of iodine by rotatisation and absorption in the filter-paper, which formerly rendered it impossible to produce a syrup of full official strength, is now prevented by boiling slightly and washing flask and filter with diluted syrup—practical details of great importance. Although the much-needed reduction in the quantity of sugar has been effected, the sp. gr. remains about the same on account of the ferrous iodide having been increased to 10 grammes in 100 c.c., probably to bring the syrup into line with the percentage system of the Pharmacopœia. Formulæ for *Syr. Ferri Bromidi* and *Syr. Picis Liq.*, two syrups in very general demand, might usefully have been included. It is disappointing that the faults which have so frequently been pointed out in the process for *Syr. Rhei* are still left uncorrected. Amongst other defects may be mentioned the wasteful procedure (surely unworthy of official sanction) of evaporating an alcoholic percolate. *Syr. Rosæ*, an unimportant syrup, also remains unaltered; it might advantageously have been remodelled on the lines of the U.S.P. formula. *Syr. Sennæ*: This is a great advance on the old syrup. The senna is "extracted by pressure," by which the greater part of the injurious and lengthy evaporation of the old process is avoided and a product obtained which, although rather thin, is of excellent appearance and aroma. *Syr. Papaveris* has been omitted without the provision of any adequate substitute. The undesirability of officially retaining a powerful narcotic, like syrup of poppies, which is of variable activity, cannot be standardised, and is unfit for medicinal treatment, especially of children, is the alleged reason for its deletion; but, although this is certainly consistent with the general principles of the new Pharmacopœia, the preparation in question, being extensively used in domestic medicine, will still be manufactured and sold, and it is doubtful if the object of its omission will be attained. The difficulty might possibly have been been overcome by adopting some such title as syr. opii co., and a formula for a similar syrup based on a standardised preparation of opium. Would the B.P.C. Formulary Committee consider the suggestion?

TINCTURÆ.—The new and altered formulæ of the tinctures, foreshadowed by the work of Farr and Wright, were finally adopted by the Pharmacopœia Committee of the General Medical Council after an examination of "some hundreds of tinctures, spirits, &c.," prepared by the editor of the Pharmacopœia; and the result of the alterations, extensive as they are, has from a laboratory point of view proved in most cases entirely satisfactory.

Tr. Aurantii is far superior in aroma to the 1885 tincture. The objection that has been raised to the use of fresh peel—viz., that it can only be obtained at a certain season of the year—can hardly have much weight when it is remembered how many other official drugs (poppy-petals, green herbs, &c.) labour under the same disadvantage.

Tr. Opii.—The well-known faults of the 1885 process have been corrected. The new method is quicker and more easily carried out, exhaustion can be completely effected, and by the final adjustment of strength (a most important improvement) uniformity is ensured.

Tr. Rhei is remarkable for the omission of saffron and replacement of part of the alcohol by glycerin. It is the only tincture, prepared by percolation from a crude drug, containing glycerin; the result, however, in this instance is a decided success.

UNGUENTA.—Many improvements have been effected in this group. Experience in the use of the paraffin basis, inaugurated in the last Pharmacopœia, has had its effect on the present formulæ, and, generally, they may all be said to be highly satisfactory. Variation in colour of certain of the ointments has been prevented by designating the particular variety of paraffin to be used—a much-needed provision, which will ensure uniformity in the future. *Unguentum Hydrargyri Nitratis*, apparently, still continues an unsolved problem. The formula, as it stands, does not in all cases give a perfect result, for the ointment is neither of a very good colour when made, nor does it retain its colour for any length of time when kept; moreover, the high temperature to which the fat and oil are directed to be heated renders the operation a difficult one to carry out, especially on the large scale. A modification of the official process, which yields an excellent product, depends on the fact that lard, either crude or imperfectly oxidised, has a powerful reducing-action on nitrate-of-mercury ointment, whilst olive oil has little or none.

The Galenicals of the New Pharmacopœia.

By H. Wippell Gadd.

The publication of a new Pharmacopœia inevitably provokes much criticism—some sympathetic, some severe, some savage. Fault-finding is proverbially easy, and grumbling the prerogative of Englishmen, whilst no patriotic Irishman is happy without a grievance.

On the other hand, it is manifestly unfair to condemn hastily, products or processes which have been put forward by a body of experts after long deliberation and many experiments.

In these notes, it is the author's object not so much to criticise as to bring forward points and apparent difficulties which have been noted in the course of manufacturing-work, in the hope of provoking a good discussion rather than of imparting information.

In the first place, it would appear that in spite of the small quantities named in its processes, its lordly indifference to the needless dissipation of spirit, and the undoubted orthodoxy of its compilers, the Pharmacopœia of 1898 is essentially a wholesaler's Pharmacopœia.

That is to say, the stringent nature of its tests, the number of spirits of varying strengths employed in its processes, and its insistance in standardisation will make it more and more difficult for the official galenicals to be made economically and efficiently on the small scale. And, that being so, it is surely not too much to ask that those whose products will be examined, not by an ignorant public, but in the fierce light which comes from the coloured carboys, should know exactly what is required of them; and what body is better able to interpret the official directions than the British Pharmaceutical Conference?

To mention the solvents first, it is satisfactory that, the tests being more stringent, "engine-waste" can no longer be described as "aqua destillata." The changes in alcoholic strengths, which at first appeared revolutionary, present no great difficulty in practice, and, as the drugs are doubtless better exhausted, they may be looked on as advantageous.

Of the new and altered preparations the author has made notes concerning the following:—

Effervescing Citrate of Caffeine.—A satisfactory formula, its only drawback being that the strength (4 per cent.) bears no simple relation to the dose.

Resin-plaster.—The directions for melting each ingredient separately are impracticable in the case of the soap.

Liquid Extract of Belladonna, which is the basis of all the belladonna preparations, with the exception of the green extract.

The pharmacopœial process, with slight practical modifications, appears to be satisfactory, although it has been shown by Bryant not to exhaust the alkaloidal strength of the root.

The latter's process, however, materially alters the appearance of the extract, which difference is particularly noted in making the official ointment.

The solid extract is made from the liquid by evaporating, adding sugar of milk, and then further concentrating—a process not free from difficulties, and which becomes objectionable when the extract is used for making suppositories.

For the latter, the author suggested that, instead of taking 18 gr. of the solid extract, as the Pharmacopœia directs, 30 minims of the liquid extract be taken.

Liquid Extract of Ipecacuanha, with its products the official vinegar and wine, are things to be thankful for, the only drawback being that, whilst the Carthagena root is not sanctioned, there is nothing in the estimation process to show the nature of the total alkaloids, and consequently the source of the drug employed.

The Liquid Extract of Nux Vomica, being estimated for strychnine only, and the consequent alteration of the strength of the solid extract and tincture, are very important points.

The author had found the separation of the strychnine and brucine by means of potassium ferrocyanide difficult.

No amount of washing appeared to free the precipitate absolutely from brucine, whilst the bitter taste persists in the filtrate.

Extract of Strophanthus is curious, as being made by successive percolation with ether and alcohol (90-per-cent.), whilst percolation with alcohol (70-per-cent.) alone suffices for the tincture.

Concerning the remaining extracts it would be well if the directions—evaporate "to a soft extract," "to dryness," "to a firm extract," &c.—could be replaced by directions to concentrate to a given weight.

Ext. Coloc. Co. and *Extract of Cascara Sagrada* would be better in the form of powder.

With regard to *Extract of Calabar Bean*, the product will vary in accordance with each manufacturer's idea of what is "a very soft extract." Definite directions that the final product be of definite weight would be preferable.

Glycerin. Acid. Boric. when made by the pharmacopœial process turns pink.

Perhaps one of the best features of the new Pharmacopœia is the use of metric equivalents; but compromises are always unsatisfactory, and one's loyalty to the decimal system is somewhat strained by the awkwardness of the concentrated liquors 1 in 10.

The amount of menstruum ordered in making liq. calumb. conc. is inadequate; a slow percolation-process would have been better.

Liq. Sarsæ Co. Conc.—If the mixed infusion and decoction be concentrated to 16 fl. oz., a pint of filtered product cannot be obtained. It should be concentrated to 18 fl. oz.

The powders are little altered; but it may be noted that decorticated liquorice for compound liquorice-powder is now officially enjoined.

Of the syrups, *Syr. Ferri Phosphatis cum Quinina et Strychnina* is unsatisfactory, the precipitation-process giving a much better product.

Syr. Cascaræ Aromat. quickly deposits.

Syrup of Lemons, containing as it does a strong tincture of the fresh peel, is a decided improvement.

It seems a pity that sp. grs. are not given for the syrups, as they form useful and ready tests.

The tinctures are the class of galenicals which have been subject to most alterations—on the whole, with satisfactory results. It may be doubted, however, if a slight improvement in flavour and a possible reduction in the price of marmalade are worth the trouble caused by the preparation of *Tincture of Orange* from the fresh peel.

If medicine requires tinctures of uniform strengths and doses, pharmacy can supply them, and has no cause to complain, but the changes in those made from potent drugs should be notified as widely and as fully as possible.

With regard to the compound tincture of lavender, and also the spirit of lavender, it has been noted that foreign oils are not now excluded from the Pharmacopœia, but as *Ol. Lavand. Exot.* is not met with which conforms to the official tests, the concession does not amount to much.

Tincture of rhubarb without saffron differs little from the old tincture.

Concerning the tinctures, the author said it seemed a pity that definite characters, such as sp. grs. or amount of extractive, were not given when more exact standardisation was not feasible.

In the lozenges it may be noted that trochischi acid. carbolici appears to be excessively strong.

Of the ointments, the process for that of nitrate of mercury is a decided improvement.

Ung. Staphisagriæ would be better made from the oil.

In the wines the test for freedom from salicylic acid is useful.

Viewing the galenicals as a class, the author said he could not but consider the new Pharmacopœia an advance on the previous ones, the weakest point being the processes; and he wondered if, in some future book, when pharmacy approximates more closely to an exact science, and the present tendency towards factory-made preparations advances still further, the galenicals may be treated as the chemicals are now, processes being omitted and tests extended.

The Chemistry of the B.P., 1898.

By P. Kelly, Ph.C.

Mr. Kelly said some held that the Pharmacopœia was not intended to be a teaching-book. He, however, argued that it should be regarded as a guide to the apprentice and a chart for the matured pharmacist. It should give the best methods for the detection or exclusion of impurities, the tests should be the most reliable known, and the directions for their application should be explicit.

Mr. Kelly pointed out first the changes in the atomic weights in the 1898 Pharmacopœia as compared with its predecessor. Every one was altered except the standard, hydrogen. This, he supposed was due to scientific progress in the method of determining them. He observed, however, that, like the ladies, they were all growing younger. Antimony before 1885 was 122, in 1885 it was 120, now it is 119. One began to fear for the periodic law. On the introduction of structural and constitutional formulæ he would say, from a scientific point of view, it was well to give an idea of the internal arrangement of the atoms in organic compounds. But from a practical point of view he thought the empirical formulæ were less strain on the memory. He instanced oleic acid, the empirical formula for which, $HC_{18}H_{33}O_2$, showed its monobasic character, while its constitutional formula is $CH_3(CH_2)_7CH:CH(CH_2)_7C{-}O{-}O{-}H$. He considered these complex formulæ should be left to scientific text-books.

Mr. Kelly thought the changes in nomenclature were an improvement, especially the acids being now expressed as salts of hydrogen. Sulphuric acid, for instance, being hydrogen sulphate, and the hydrates being termed hydroxides, is a decided step forward. He regarded the new form of preparing dilute hydrobromic acid as a great improvement on the 1885 process. The methods of preparing sulphurous anhydride were noted. The 1885 process of boiling the sulphuric acid with carbon, being faulty. might be omitted.

Noticing the tests for citric and tartaric acids, Mr. Kelly said he would hardly have expected one to detect tartaric in citric acid, the commercial value being so nearly equal. The hydrogen-peroxide test for tartaric acid he thought a very pretty one. The mirror or reduction test he thought might be dispensed with. He noticed also the B.P. references to phenol and salicylic acid, and the standardisation of certain preparations, which he thought a great improvement. The changes in the molecular weights he thought ought to have been commented on in regard to the volumetric solutions.

The Chemistry of the Pharmacopœia.

By A. L. Doran, M.P.S.I.

The author, after an introduction to the subject, said the chemistry of the Pharmacopœia presents nothing particularly novel, and has been familiar to most pharmacists for a long time, although a good deal escaped incorporation in the edition of 1885. Changes in nomenclature were to be expected, as was also the introduction of a militant metric system—indeed, reigning alone in the purely scientific work. The author did not agree with the strictures which have been passed that the tests included in the Pharmacopœia were insufficient for the untrained student and superfluous for the trained analyst, the tests being intended for the average man. The introduction of reasonable standards of purity, conforming to good commercial specimens, is of great importance at a time when the usage of citing the B.P. as a legal standard under the Food and Drugs Act has become well established. In so comprehensive a work as the B.P. some of the tests—doubtless, after a time, some of the standards—adopted will be found open to objection and in need of revision, and it is especially here that the services of many able and willing pharmacists throughout the United Kingdom might be enlisted to work either alone or in conjunction with local associations. As an example, the author mentioned a recent experience of his, where, in the case of bismuthi salicylas, he found salicylic acid present in more than traces.

Attention was drawn to lack of graphic formulæ, which the preface says are only excluded by reason of the limitations of page-area, and the author proceeded to give an illustration by means of the graphic formula for exalgin of the great informative power of such a representation. The author concluded by hoping that the General Medical Council will pursue the wise and dignified policy of delegating detail-work to the hands of those best able to properly execute it, so that at last a Pharmacopœia would be turned out resting firm and unassailable on the triple support of expert, commercial, and officinal knowledge.

Botanical Nomenclature of the British Pharmacopœia.

By G. Claridge Druce, Hon. M.A. Oxon., F.L.S., &c.

The botanical names for the plants yielding the various drugs which are included in the British Pharmacopœia have been altered in some cases from those employed in the last edition, but the changes in almost all cases are made in the right direction. The selection of the names is evidently based on the law of priority of publication, and the date 1753 appears to be taken for the citation of both genera and species. This has a distinct advantage over the dates of the publication of Linnæus' "Systema" of 1735, and of the first edition of the "Genera" of 1737.

In a few instances it appears that the law of priority has not been complied with, and the author ventured to point them out, rather with a view to elicit the reasons which led to the choice of the names employed than to claim absolute authority for those which are here suggested.

Citrus Aurantium, var. *Bigaradia*, Hook. fil., is now adopted for the bitter orange. The author suggested that Linnæus, in his first edition of the "Species Plantarum," described it as *C. Aurantium*, and gave as a var. *b* the sweet orange, so that it appears *C Aurantium*, Linn , would have been sufficient to distinguish the bitter orange. If a name exclusively referring to it were needed, it would seem that *C. vulgaris*, Risso, published in *Ann Mus. Par.*, xx. (1813), page 190, has precedence over *C. Bigaradia*, which appears to have been first published in Loiseleur's edition of Duhamel's "Traites des Arbres et Arbustes," vol. vii. (1819), page 99.

Araroba.—According to strict priority the name *Andira* is superseded by Aublet's genus *Vouacapoua*, published in the "Histoire des Plantes de la Guiane Française," Suppl., page 9, t. 373 (1775); while Lamarck's genus *Andira* only dates from the "Encyclopédie Méthodique," vol. i. (1783), page 171. In the "Revisio Generum Plantarum" Otto Kuntze chose Aublet's name, but altered the spelling to *Vuacapuæ* in order to bring Aublet's vernacular name closer to classical rule. Since other vernacular names are adopted, with the spelling unchanged, in the "Genera Plantarum" of Bentham and Hooker, it would appear better to follow the original spelling, and write *Vouacapoua Araroba* (Aguiar).

Balsamum Peruvianum et Tolutanum.—The generic name *Toluifera* of Linnæus's "Species Plantarum" of 1753 (which he also used in the "Materia Medica" of 1749 and his "Genera" of 1742) has precedence over *Myroxylon*, which appears to have been first used in 1781 by the younger Linnæus in his "Supplement." The author suggested the name *Toluifera Pereiræ* and *Toluifera balsamum* for the plants yielding Peru and Tolu balsam.

Gamboge.—The original spelling of the gamboge-plant in the *Journal* of the Linnæan Society for 1875, vol. xiv., page 485, was *Garcinia Hanburyi*, not *Hanburii.*

Capsicum.—Flückiger and Hanbury say that Farr has ascertained that the official plant is identical with *Capsicum frutescens*, Linn. ("Species Plantarum," page 189, 1753). If this is the case, should it not be substituted for the name

C. minimum, Roxb ? There is also a *C. minimum* of Blanco' from the Philippines, which appears to be a different species. The fact that the plant referred to in the "Hortus Cliffortianus" by Linnæus is not identical with *C. frutescens* of the "Species Plantarum" does not appear to be a sufficient reason for rejecting the latter name.

Catechu.—In this case there is an earlier name which was given to the genus *Catechu* by Auhlet. Otto Kuntze in the "Revisio Generum Plantarum" took up Auhlet's genus, but altered the spelling to *Uruparia*. Schreher's genus *Uncaria* only dates from the "Genera" of 1789. Our plant should be *Ourouparia Gambier* (Roxburgh) = *O. Gambir* (Baill., "Hist. Plantes," vol. vii., page 350).

Cimicifuga Racemosa, Elliott.—The date of the publication of "A Sketch of the Botany of South Carolina and Georgia," where this plant is mentioned by Elliott, is 1824 (see vol. ii., page 16), but the "Kew Index" gives an earlier authority—namely, Nuttall's "Genera of North American Plants," vol. ii , page 15 (1818).

Copaiba.—The name of the genus of plants yielding our drug is given as *Copaifera*, which dates from the second edition of the "Species Plantarum," which was published at the end of 1762 or the beginning of 1763. In 1760, however, Jacquin, in the "Enumeratio systematica plantarum, quas in insulis Caribæis vicinaque Americes Continente detexit novas," gave the name *Copaiva*. Should this be a valid publication the official plant will have to be called *Copaiva Lansdorfii*. Among the other species yielding copaiba are *Copaiva officinalis*, *Copaiva coriacea*, *Copaiva guyanensis*. *Copaiva multijuga* rests on rather uncertain identity, since it is said a fragmentary specimen only exists.

Cusso.—In the Pharmacopœia of 1885 the name *Brayera anthelmintica* was displaced by that of *Hagenia abyssinica*; now the former name is restored, but the author did not see why. Bruce first described the plant in his "Travels in Abyssinia." In the text it is called *Banksia abyssinica*, but on the plate, dated December 1, 1789, it is spelled *Bankesia*. The name, whichever spelling be followed, is invalid, owing to there being an earlier genus *Banksia* in the *Proteaceæ*. In the "Systema" of 1791, J. F. Gmelin therefore named the cusso *Hagenia abyssinica*, and this name was adopted by Willdenow in the "Species Plantarum." The earlier *Hagenia* of Mönch is not a competing name, since it is now sunk in *Saponaria*. Bruce spelt the name "cusso."

Filix Mas.—The name of the male fern is given as *Aspidium Filix-mas*. In most works on English botany *Lastrea* is the name used for the genus, and this was established by Presl, in 1836, as distinct from *Aspidium*. The oldest name for the genus appears to be *Dryopteris*, which was used by A. Adanson in his "Famille des Plantes," and where he correctly diagnoses the genus. Our plant is *Dryopteris Filix-mas*.

Fœniculi Fructus.—The name *Fœniculum capillaceum* is retained, but the oldest name is *F. vulgare* (Miller, "Gardener's Dictionary," 1768).

Menthol.—*Mentha arvensis*, DC , is stated to be one of the plants yielding it, but the authority for *M. arvensis* is Linnæus, in the "Species Plantarum" of 1753, not De Candolle. *M. piperita*, Smith, should be cited as of Hudson, since he describes it in the "Flora Anglica" of 1762. long before Sir J. E. Smith. Linnæus also gives a *Mentha piperita*, but there is some doubt as to the exact identity.

Myrrha.—It is a pity that the name *Commiphora*, which is adopted by some continental Pharmacopœias, should not have been chosen, since it was established by Jacquin, in 1797, and has considerable priority over the name *Balsamodendron*, which was not founded until 1824 by Kunth.

Oleum Menthæ Viridis.—In the first edition of the "Species Plantarum" the spearmint was described by Linnæus as *Mentha spicata* var. *viridis*. In the second edition of 1762 he gave it specific rank as *M. viridis*. Meanwhile Hudson in his "Flora Anglica" had previously described it as a species under the name *M. spicata*. It is a question, therefore, whether the name should not be *M. spicata*, Huds.

Oleum Rosæ.—The authority for *Rosa damascena* is not Linnæus, but Miller, who first described it under that name in "Gardener's Dictionary," 1768.

Pareiræ Radix.—The name of the plant is given as *Chondrodendron tomentosum*, but it is spelt *Chondodendron* by Ruiz and Pavon.

Quillaiæ Cortex.—The specific name should be spelt with a capital, as *Q. Saponaria*, as should *Citrus Medica*.

Sinapis Nigræ Semina.—The name of the black mustard is given as *Brassica nigra*, Koch, but Roth had previously called it *Brassica sinapioides*, and until British botanists accept the permanence of the specific name as a rule of nomenclature, the latter name should be adopted.

At this point the Conference adjourned for luncheon.

FOURTH SESSION, WEDNESDAY AFTERNOON.

The last session was resumed at 2 13 P.M. with

A SHORT NOTE ON LIME WATER.

By E. J. Evans.

A few experiments were attempted with lime-water in view of recent prosecutions under the Foods and Drugs Act.

1. Lime-water was made with 2 oz of freshly-slaked lime to the gallon, and allowed to stand twenty-four hours.
   100 c.c. of this solution, filtered, required 49 c.c. $\frac{n}{10}$ vol. hydrochloric acid.
2. Lime-water made of same strength, but lime previously washed with a little water.
   100 c.c., filtered, required 49·5 $\frac{n}{10}$ vol. hydrochloric acid.
3. Ordinary shop solution.
   100 c.c. required 48 c.c. $\frac{n}{10}$ vol. hydrochloric acid.
4. No. 1 solution kept in a flask covered with a chip box lid, in contact with the excess of lime for a week, and then titrated.
   100 c.c. required 47 5 c.c. $\frac{n}{10}$ vol. hydrochloric acid.
5. No. 2 solution kept in a flask covered with a funnel, in contact with excess of lime.
   100 c c. required 48 c.c. $\frac{n}{10}$ vol. hydrochloric acid.
6. Lime-water was made with water to which 16 gr. of magnesium sulphate per gallon had been added.
   100 c.c. required 50 7 cc. vol. $\frac{n}{10}$ hydrochloric acid.
   A week later 50 5 c c.
7. Lime-water made with water containing 16 gr. alum to the gallon.
   100 c.c. required 50 2 c.c. $\frac{n}{10}$ vol. hydrochloric acid.
   Week later 50 25 c.c.
8. Lime-water made and tested fifteen minutes after mixing.
   100 c.c. required 51 c.c. vol. $\frac{n}{10}$ hydrochloric acid.
9. No 8 fifteen minutes later.
   51 7 c.c.
10. Lime-water made with water containing $\frac{1}{10}$ vol. of CO_2.
    100 c.c. required 49 $\frac{n}{10}$ hydrochloric acid.
11. With water containing $\frac{1}{2}$ vol. CO_2.
    100 c.c. required 39 c c.

Two ounces of lime hydrate is too large a quantity to use if the lime used is fairly pure. Theoretically, 96 gr., or 6 2 grammes, would be required. Experiments with this and tested an hour after:—(*a*) sol. 72 gr. to gallon required 30 c.c.; (*b*) 96 gr. to gallon, 37 c.c.; (*c*) 120 gr. to gallon, 40 c.c.; (*d*) 144 gr , 43 c.c. After twenty-four hours the same result. From these experiments it seems that lime-water can be made in a few minutes if a fairly pure caustic lime be recently slaked before using; also that when intended to be kept the lime-water should be in contact with the excess of lime used.

There was no discussion on this, and an abstract of the following was then read:—

THE AMOUNT OF CARBONIC ANHYDRIDE AVAILABLE IN THE OFFICIAL GRANULAR EFFERVESCENT PREPARATIONS.

By C. S. Dyer.

Supplementary to the investigation of this subject is the examination and comparison of commercial specimens, with a view to obtaining an official standard. The quality of nonmedicinal granular saline rests solely on the extent of its effervescence, the object being to get as much carbonic-acid gas as possible for the smallest quantity of dissolved salt. The best practical method of estimating the gas is volumetric. An ordinary Lunge nitrometer with the urea-apparatus attached was used. The nitrometer was filled with mercury. The different samples were moistened with an equal quantity (2 c.c.) of water, at same temperature and pressure. The absorption of gas would be the same in each case, and would not exceed 2 c.c. Specimens of bicarbonate of soda were tried before and after drying at 100° to 105° C. (the temperature used for granulation). The resulting loss in weight amounted to 2 per cent, apparently water. The ingredients of sodii citr. tart. effervescens, B.P., were then taken. (1) Part was immediately tested for quantity of CO_2, (2) part was dried below 54° C. without granulating, (3) and the result passed through the B.P. process, granulated and dried. (2) and (3) lost about 10 per cent. in weight, as the B.P. states, but the portion not heated much showed a higher percentage of gas available The loss in weight is due to loss of carbonic acid and water resulting from the chemical combination on drying. The results are embodied in the following statement:—

Substance Experimented on	Quantity Used	C.c. of CO_2 evolved at Normal T. and P.
(1) Bicarbonate of soda	·15 gramme ·15 ,,	41·6 c.c. 41·8 c.c.
(2) Ingredients of B.P. eff. citro-tartrate immediately after mixing	·3 gramme (= 46 per cent. $NaHCO_3$)	39·24 c c. (Slight loss, the powders being very damp)
(3) Ditto dried below 54° C., not granulated	·3 gramme	33 c.c. (= 21 per cent. loss gas)
(4) B.P. process carried through	·3 gramme	27 c c. (= 32 per cent. loss gas)
(5) Good commercial sample by well-known maker	·3 gramme	26·8
(6) B.P. sodii sulph. eff.	·3 gramme	21·8 (Was an old sample)
(7) B.P. mag. sulph. eff.	·3 gramme (Contains only 36 per cent. soda)	15 c.c. (Contains only 36 per cent. soda against 50 per cent. of No. 6)
(8) Sample of mag. cit. commercial	·3 gramme	15 c.c. (Contains about 33 per cent. soda; results fair)

From these figures it appears that good commercial specimens of the B P. article and carefully-made samples, unless absolutely fresh, exhibit only about 60 to 70 per cent. of their bicarbonate of soda available for effervescing-purposes, showing that fully 30 per cent. of the acids and carbonate combine during the process of granulation, and are lost for effervescing-purposes. The loss of carbonate is nearly sufficient to neutralise the amount of citric acid present, and as the citric causes the mass to flux because it melts at 100° C., it practically all combines with the carbonate, leaving the eventual effervescence entirely to the tartaric acid.

The method used for estimations is suitable for judging samples of salines, as it is quickly done. The characters and tests of these preparations should state the least amount of carbonic-acid gas each should yield when similarly treated A sample, for instance, which does not show, say, 50 per cent. of its bicarbonate available for producing effervescence should not find a place in modern pharmacy.

Discussion.

Mr. W. Martindale said it was evident from the paper just read that the effervescing properties of these preparations depend on the proportions of citric and tartaric acid present, the citric acid being rendered useless during the process of manufacture.

The President said he had always used the smallest quantity of citric acid necessary to make granules, depending on the tartaric acid for the subsequent effervescing properties. He questioned whether an active condition of effervescence is necessary, although customers always expected it.

Pharmacopœia Discussion.

2 23. The President, in inviting discussion on the papers read before luncheon, asked speakers to keep within reasonable limits.

Mr. S. R. Atkins wished to lead the van in the discussion, and admitted (with a smile) that any faults in the British Pharmacopœia were due to no Irishman being engaged in preparing it. (Hear, hear, and laughter.) He thought it was quite time that, as pharmacists, they should have a more definite position, it would not be enough for pharmacists to be brought in as experts, they should ask for a statutory position in the production of the Pharmacopœia. It should not be a position accorded to pharmacists by mere compliment on the part of the body now legally entrusted with its production; he said that pharmacists, being a body who by their training and their experience were best acquainted with the processes and the results, should not simply be invited to co-operate, but should be asked under the statute to take part in the production of the Pharmacopœia. (Hear, hear.) Having said that much, he would like to express his difference of opinion with one of the speakers that morning, that he thought it would be well if the position were entrusted to the British Pharmaceutical Conference. Mr. MacEwan had given them a most valuable paper, and with the main argument he was entirely in accord, but he differed with him on the point in question. He (Mr. Atkins), speaking for the moment as a member of the Council of the Pharmaceutical Society, wished to say this—that he thought the Society was the body to whom the work ought to be entrusted. (Applause.) They could do a good deal of free-lancing outside and leading up to the campaign, but he thought that the function and the duty and the status of that Society were such that it should be entrusted with the duty. He could say this, because it was no new doctrine of his, as he had ventured to say so when it was heterodox to do so. In the early days, when they were so absolutely conservative, when he proposed to read a paper down in the West, one of the solemn elders of the day asked whether the paper contained any dangerous or explosive matter. (Laughter.) They had made long advances since then, and from that platform he said that day, that in the production of future Pharmacopœias the position of pharmacists should be recognised by the statute of the country. (Applause.)

Mr. J. C. Umney said that there was no difficulty in making an ext. ipecac. liq. of full strength from good ipecac. Apart from the observation of Messrs. Naylor and Bryant regarding belladonna not being exhausted in making ext. bellad. liq, while corroborating that, he stated that it was a mistake of the B.P. not mentioning the time of collection, and that would have an important bearing on the future of this drug. The root varied according to the time it is collected. Liquor thyroidei did not keep, and makers would need to alter the B.P. formula in the direction of improving the preservative. As to doing away with proof spirit, Mr. Bird and those who thought with him must not forget that the Excise authorities reckoned in terms of proof, and those who exported tinctures had drawback by the proof gallon. Referring to other preparations, Mr. Umney said that owing to the removal of the boric acid from ung. conii it did not keep. He had already referred to ung. hyd. nit. in a Chemist and Druggist article, showing that the process was not a success; and he reminded those who did not like tr. aurant. recent. that there would be no difficulty next year in getting a plentiful supply of the peel, and pharmacists—provident men always, he hoped—(laughter)—had then to make a year's supply. In his experience ext. physostig. would not powder; it was a stiff extract; and there are other extracts which want looking into. Syr. Eastoni is most satisfactory in his experience. Mr. Umney concluded by referring to some of Mr. Kelly's criticisms, and good-humouredly said that if there were tests for galenicals in the B.P., the chief effect of them would be that after retailers had had preparations in stock for two years they would return them to wholesalers because they were not up to the mark. (Laughter.)

Mr. D. L. **Howard** maintained that the point of view of the chemical-manufacturer, who was not a pharmacist but a chemist, ought to be considered in Pharmacopœia-revision. For instance, in such things as Rochelle salt, Epsom salt, quinine, and camphor, which no retailer ever made, the manufacturer should be considered and consulted. He endorsed what Mr. MacEwan had said regarding the United States Pharmacopœia. It was an excellent work, and there was nothing so concise and perfect as its chemical tests. One of the speakers made a very true remark when he said that the excellence of the product and the economy of production were proper aims, but it was well to remember that the best was often the economy of the good. We might often insist upon unreasonable impurity, and thus lead to extraordinary expense. This was especially the case with two articles which were commonly in household use—citric and tartaric acids. Two or three years ago there had been a prosecution for the presence of lead in these acids. The 1885 test detected 1 in 1,000,000, or 1 gr. of lead in $1\frac{1}{2}$ cwt. of the acid—a degree of impurity which all would concede would not do much harm; but now the B.P. gives the test in such a way that it detected not only lead but iron, and public analysts might take advantage of that to the disadvantage of all concerned. He pleaded that greater strictness in fixing limitations should be followed in the B.P., and after a casual reference to percentage spirits proceeded to say that the relegation of qualitative tests to the appendix was a retrograde step, instancing the testing of zinc oxide for sulphate as a misleading case, for much here depends upon the acid used to dissolve the oxide. The test for chloride (a curdy precipitate with $AgNO_3$) was bad, for a blueness indicated a trace. Finally, Mr. Howard told the meeting of experiments which are in progress, showing that alcohol at the ordinary temperature decomposes a perfectly normal salt.

3.48. Mr. Theo. **Wardleworth** would like to know the position of chemists now that the synonym for cream of tartar was altered to purified cream of tartar with the increased percentage of bitartrate of potash required. Must the public ask for "purified" cream of tartar when wanting the 98-per-cent. article, and simply cream of tartar when the 92·5 per cent. of bitartrate of potash was required?

Mr. **Wells** said he rose as an Irishman to ventilate one more Irish grievance. He alluded to the fact that Irishmen were not represented on the committee. As they were probably aware, the Irish Council declined on principle, as they considered they had a *right* as pharmacists to be on the committee, not by sufferance. There was another grievance; he would like to say that he considered the Pharmacopœia too much of a London Pharmacopœia. Mist. ferri aromat. was used in large quantity in Dublin—he knew a retail house who made 50-gallon batches—yet it was left out of this Pharmacopœia. Mist. ferri co., on the other hand, was rarely used. Dec. cinchon. was also one of those preparations which had a large use in Dublin. Also, as to changing the strengths of preparations, tincture of nux vomica was causing a lot of trouble. What with the formula of the present and those of past ones, they were becoming quite mixed, and one was frequently in doubt as to which to use. He thought it was a right thing to improve the Pharmacopœia, but could not hold with making so many unnecessary changes. The only way out of the difficulty he could see was to give the preparation of the book into the hands of pharmacists, and then they would, he was sure, soon have a Pharmacopœia to be proud of.

Mr. T. M. **Clague** said it seemed to be pretty generally agreed that pharmacists should have a right to have a share in making the Pharmacopœia. He could not agree with Mr. Atkins that the Pharmaceutical Society of Great Britain was the right body to do the work. That was a society which only wielded sway in Great Britain, whereas the British Pharmaceutical Conference represented Great Britain and Ireland. It would be little short of a catastrophe not to have any Irishmen on the committee. They had, he continued, a confession from one or two of the speakers that the Pharmacopœia was essentially a wholesaler's Pharmacopœia; now, his contention was that retailers ought, and what is more, they intended having more to do with its preparation. The retailer has the right to, he pays for it. How many doctors possess a copy? Not one in ten, he thought; the wholesalers may get through a few copies between them, but the retailers were the people who bought it. Of course they were glad of the help the wholesalers generously gave to the Pharmacopœia Committee. Through them he supposed was due the introduction of concentrated liquors, which made it very strange that with all their generosity there was not one of them so generous as to say when they came to inf. gentian conc., "We have a good formula for this, here it is." Why, he as a retailer would have given them one with pleasure. Then again, why was glycerin put in tr. rhei?—whatever for, he would like to know?—was it so that nobody could make a reliable analysis of the tincture?

Mr. E. H. **Farr** said he would like to endorse Mr. Bird's remarks in regard to repercolation—it was a method which might be extended considerably. He had found that most excellent results could be obtained. The use of heat as now official was deleterious. Mr. Gadd spoke of the non-exhaustion of belladonna-root in making liquid extract; this was doubtless the case when manipulating small quantities, but he did not think it was when making large quantities. Mr. Wright and he had found that in extracting drugs the earliest fractions were always richer in the active principles of the drug, though they contained less extractive, so taking that into consideration the exhaustion of the drug to its utmost limits would lead to much waste of spirit, whilst not rewarding them with any reasonable increase of activity. He was not prepared to endorse the view that brucine and strychnine should be separately estimated when assaying nux-vomica preparations, as the proportion of brucine present was really very small, and was intensified by its delicate reactions and persistent bitter taste. In regard to liq. calumbæ conc., in acting on Mr. Gadd's suggestion that this should be made up to 18 oz. instead of 16 oz., he did not think this permissible, as it would alter the proportion of spirit; it would be better to add a mixture of spirit and water on the filter. Then as to tinc. strophanthi, he thought there was no warrant for the suggestion that the present preparation was half-strength. In conjunction with Mr. Wright he had done much work on this tincture. They had found that there was practically no difference in the yield of impure strophanthin, whether 40 or 90 per cent. alcohol was used, the strengths were practically identical. He noticed Mr. MacEwan's remarks about potential examiners retiring into their scientific coffins when they received their appointment; he trusted that remark did not apply to him, although he half thought it did. (Laughter.)

Mr. J. R. **Hill** spoke in reference to Mr. Kelly's remark when speaking of the changes in the atomic weights in the Pharmacopœia. He (Mr. Hill) did not think the change justifiable. Take, for instance, caustic soda which was formerly 40, and now was 39·76, and in volumetric works where it was admitted that the results were only approximate, very awkward figures were introduced, and he could not see why they need trouble about such a fraction. Mr. Kelly had remarked that, of course, they had not changed the atomic weight of hydrogen, as that was the platform on which the atomic theory was built; he (the speaker) could not see why they should not; the unit of hydrogen was perfectly arbitrary. If they took oxygen, for instance, as 16, he had found that it was possible to reach round numbers better. Hydrogen, it was true, came out at 1·06, but it was a case where they could neglect the fraction.

Mr. **Cowley** said that in extracts which he had made with ext. bellad. liq. he had obtained nearly $1\frac{3}{4}$ of the bodies required by the B.P. in the first percolate. He objected to adding the coriander to the menstruum in making syr. rhei, as it was partly volatilised in evaporating the liquor. He agreed with Mr. Hill as to the atomic weights.

Mr. W. Martindale, speaking in his capacity as a member of the Pharmaceutical Committee who took part in the revision of the work, replied to some of the criticisms, but he deprecated any idea that he spoke officially, and regretted that Dr. Attfield was not present to reply. Pharmacists, he said, had not the legal right to revise the B.P. — that belonged to the General Medical Council, and had been exercised by the Council in the 1864, 1867, 1885, and 1898 editions. The Pharmaceutical Committee gave their advice as experts, and had no voting power; but they sat in committee, and gave their best attention to the subjects brought under their notice. The position was not in every way an agreeable one; but they were in a better position than the pharmacist of the United States, whose Pharmacopœia was a private one—a private speculation in publishing. It had no legal status, like the B.P.; and he thought, with all deference to Mr. Howard, that it contained much irrelevant matter. As to the criticisms now made on the B.P. processes, he was glad to think that they were not numerous. He did not approve of ext. casc. sag. liq. being made with water; resinous drugs should be exhausted with a spirituous solvent. He did not think it mattered much though the belladonna for the liquid extract was not exhausted, so long as it was the proper standard. This he maintained after verbal interruptions regarding the great loss. He considered the new formula for ergotin an improvement, and, after a few words about weights and measures and weighing liquids, defended the non-recognition of certain proprietary preparations, and thought the syr. ferri iod. assay process was a good addition. He could not defend the addition of glycerin to tincture of rhubarb — that was a thing he had nothing to do with; but he defended the syr. sennæ process at some length. The formula for ung. hydrarg. nitr. was the formula of a celebrated house, but it required great expertness to turn out good results. He had found that if both solutions used were separately heated up to 190° before mixing it was a little less difficult to manipulate. By this method he had obtained excellent results. In regard to assaying ext. nuc. vom. for strychnia and brucia, the brucia was almost inert, and any process of estimation which would give the quantity of each might still yield a very variable product. He (Mr. Martindale) did not like the B.P. ext. coloc. co. The process which he suggested and preferred was to exhaust with alcohol, evaporate to dryness, and add to the powdered drugs. The B.P. preparation, he was told, had a nicer appearance, but then his drugs were not made to look at. He had not found ext. strophanthi gritty, and his ext. physostigmatis was a paste, whatever others turned it out. Easton's syrup stood the test of keeping better than any of the numerous kinds he had experimented with. The small quantity of sulphuric acid remaining from the sulphate of quinine was not worth taking notice of. Then the tinctures; he might say that the alterations in strength to suit the doses were not pharmacists' alterations; they were done to please the medical authorities. He held it was a mistake—they administered a larger quantity of alcohol than was necessary; and, besides, it was degrading to pharmacy to tamper with their preparations just to please the bad memories of medical students. It would have been better if some decimal strength had been adopted—1 in 5 or 1 in 10. The oil of stavesacre he did not regard as representing all the properties of the seeds, and on that account the method of digesting the powdered seeds in melted fat was preferable in making ung. staphisagriæ. He was sorry the boric acid had been left out of ung. conii; it was, he thought, an oversight. It would, perhaps, be better to have an ointment made with coniine, but the pharmacists had not the selection. Bismuth salicylate had been objected to; it was said there was none to be had which came up to the B.P. standard of purity. He held that it was necessary to keep the manufacturers up to the mark—they would produce a pure salt if there was a demand for it. Mr. Howard was strong apparently on what he would call the limit of adulteration—well, he (the speaker) did not believe with it. Mr. Martindale agreed with Mr. Druce that the botanical part of the work had been well done; he would not attempt to criticise either the Pharmacopœia names or those suggested by Mr. Druce. He could tell their Irish friends that it was not pharmacists who threw out mist. ferri arom.; the medical men did that, as well as dec. cinchon. In regard to the question raised about cream of tartar, his opinion was that, unless purified cream of tartar was asked for, the article supplied need not be up to the B.P. standard.

The President said he should be sorry if the discussion gave rise to the idea that they were antagonistic to the medical profession; that was not so. In fact, some years ago, when a petition was prepared urging that pharmacists should have a share in the preparation of the Pharmacopœia, he remembered that in canvassing the medical men of Liverpool not a single one refused to sign. He was a little shocked to hear Mr. MacEwan ask, "Why should Pharmacists trouble about the Pharmacopœia?" about a book which bore the words "by authority" on the cover. He would like to say, however, that he had studied the Acts bearing on the preparation of the Pharmacopœia, and he had failed to discover one word which prevents the Medical Council appointing a committee of pharmacists to prepare the work. Perhaps if they had stuck out and refused to work on the terms offered they would have been in a better position in the matter to-day. He did not want to intensify any grievance, but in looking the matter up he found that the Dublin Pharmacopœia was the only one which was published by the authority of an Act of Parliament, the London one was made by reason of an order in Council, whilst the Edinburgh one had no authority whatever. He did not know why they should want to classify remedies according to their doses. They had still the difficulty of remembering to what class the drug belonged. It was absurd to attempt it. Pharmacists did not attempt to exhaust all drugs with two strengths of spirit, for instance, but set up different strengths in regard to the requirements of the drug. If they had wanted classification there was hydrocyanic acid 2 per cent. in strength. Well, that was an instance where 1 per cent. would have been better as regards the dose, and probably as regards keeping qualities. Alterations, he held, should be consistent.

Mr. Bird then explained some misapprehensions that speakers had arrived at in discussing points in his
3.45. paper; and Mr. MacEwan said that several gentlemen wished a definite proposition to be put regarding pharmacists and the Pharmacopœia, but he thought that would be unnecessary if the Executive and Formulary Committee honestly endeavoured to consider the matter before the next meeting and bring up some definite and strong motion on the subject.

This terminated the proceedings so far as the papers were concerned, Dr. Gordon Sharp's paper on albumen, though mentioned on the programme, being passed in silence.

The Bell and Hills Fund.

The President said that the Bell and Hills fund existed for the purpose that the Conference should give to each place in which it met some valuable books, to be placed in the library of the local chemists' association. In Belfast at present there was not such an association, but he hoped after that Conference an association would soon be called into existence. (Cheers.) However, the authorities of the Public Library had kindly consented to accept the books, and retain them until such time as an association would be formed, and these books would be the nucleus for a library for the association. (Cheers.) He would ask Mr. Payne (as Chairman of the Local Committee) to accept the books, and Mr. Martindale had also given a copy of his "Extra Pharmacopœia."

Mr. J. C. C. Payne, J.P. (Belfast) said that as Chairman of the Ulster Association, which had been formed purposely for inviting the Conference to Belfast, he had great pleasure in accepting the books, as they were aware the invitation extended to the Conference as the united invitation of the Pharmaceutical Chemists of the North of Ireland and of the Chemists and Druggists. It so happened that those two Associations only met in temporary offices, and had no home of their own—that is to say, they had no place in which they could put those valuable books to refer to them at any time. Having consulted together, they decided that the best course to adopt would be to get the books placed in the Free Library. Through the kind offices of Sir James Haslett, who was a member of the Corporation, they were able to prevail upon the Library Committee to accept the books temporarily. These books would be ready for reference during all the hours that the library was open to the public. (Hear, hear.) He had asked Mr. Elliott, the librarian, to come there that evening and receive the books. In conclusion, Mr. Payne, on behalf of the Association he represented, expressed the thanks of that body for the valuable present of books from the Bell and Hills Fund.

Mr. ELLIOTT, librarian, said that, on behalf of the Library Committee, he had much pleasure in accepting the books. For the information of the members, he might say that the books would be placed in the public-reference department, which was open from 9 o'clock in the morning until 10 o'clock at night on five days of the week, and on Wednesdays from 10 o'clock till 3 o'clock.

THE FORMULARY COMMITTEE.

The PRESIDENT said that letters of resignation from the Formulary Committee had been received from Mr. Groves and Mr. Reynolds. These gentlemen's names were so well known that any attempt to describe their work and their usefulness to the Conference in its earlier days, and down to the present time, would be superfluous, but he must say that they were very sorry to lose these gentlemen as members of the Formulary Committee. (Hear, hear.) Mr. Groves was getting infirm, and he did not want to keep out younger members; while Mr. Reynolds seemed to have a similar feeling. They felt assured that both gentlemen in the future would help in every way they could the work of the Formulary Committee. (Hear, hear.)

Mr. RANSOM then moved that the following gentlemen constitute the Formulary Committee for the year:—Messrs. W. Martindale, W. A. H. Naylor, A. C. Abraham, T. Greenish, T. Maben, N. H. Martin, H. Ransom, C. Symes, R. Wright, and Mr. F. C. J. Bird and Mr. H. Wilson in the place of Mr. Groves and Mr. Reynolds.

Mr. CLAGUE, in seconding the motion, hoped the Formulary Committee would have more to do in the year to come than they had had to do for the past year or two.

The motion passed unanimously.

PLYMOUTH SELECTED FOR NEXT YEAR.

Mr. PARK (Plymouth) said he felt great pleasure, as a delegate from the Plymouth District Association, in inviting the Conference to visit Plymouth next year. (Cheers.) It was over twenty years since the Conference paid Plymouth a visit, and he believed they had quite a new crop of pharmacists waiting for the sickle of the Hon. Secretaries to gather them into the granaries of the Conference. (Hear, hear.) Of course, Plymouth could not vie with the great centres of industry that the Conference had lately visited. It could not attempt to vie with either the first, the second, or the third commercial cities in the Empire. They, in Plymouth, could not show the Conference the miles of shipping to be seen in Liverpool, or the miles of ships being built in Belfast; but in Plymouth they could show the members of the Conference a few ships, and at Plymouth they took care when they got the ships to keep them. (Hear, hear.) On behalf of his Association he had to tender their most grateful thanks to the Brighton Association for the kind way in which they had met the Plymouth Association in this matter. They in Plymouth were not aware that Brighton intended to ask the Conference to go there next year, but when Brighton learned that Plymouth wanted the Conference, Brighton at once waived their prior invitation.

Mr. TURNEY spoke in support of the invitation from the Plymouth district. He said that if the Conference saw their way to accept the invitation, a hearty West Country welcome awaited them. (Cheers.) He felt that Plymouth would be a great centre for the work of the Conference—that the Conference would leave good results behind—because the enthusiasm of the scientific workers of that Conference would be caught up by the pharmacists in the West of England. (Cheers.) They in Plymouth could not hope to extend to the Conference such a magnificent reception as Belfast had given them. In Belfast the Conference had got that true Irish welcome characteristic of the generous Irish character —(applause)—in fact, it had partaken of a national welcome. (Hear, hear.) They in Plymouth were not in a position to extend such a princely welcome as that. It was not a wealthy city like Belfast; but its old historical associations were of great interest to them all. Plymouth helped to make a page in the history of England, and many people were not slow at present to mark the deeds of the men of the Elizabethan period. He concluded by supporting the invitation to the Conference to visit Plymouth in 1899. (Applause.)

Mr. W. W. SAVAGE (Brighton) said that when Brighton learned that Plymouth was going to invite the Conference, they in Brighton at once recognised Plymouth's prior claim, and thought it their duty to give way, at the same time hoping that the Conference would visit the "Queen of Watering-places" on some other occasion. (Laughter.) In the year 1900, he understood, the Conference was going to visit London, and perhaps they might then spare one day to visit Brighton, when he could promise them a day of unalloyed pleasure. (Laughter.) The invitation to Brighton was therefore only postponed, not cancelled; and he would ask the Conference by an unanimous vote—their trade was divided enough, without having any divisions among themselves—(laughter)—to decide on going to Plymouth next year. He had great pleasure in moving that "The place of meeting for the year 1899 be Plymouth." (Applause.)

Mr. BIRD seconded the motion. They would all regret quitting the Emerald Isle and bidding good-bye to the sons and daughters of Erin, but the pain of parting would be alleviated by the efforts being made in advance by their Plymouth brethren—(laughter)—he should have said their brethren in Plymouth—the cordial invitation of the Plymouth district being a foretaste of the joys that were in store for them. (Hear, hear.)

Mr. TURNEY said that Mr. Bird need not apologise over "Plymouth Brethren," as it is always understood in Plymouth that the brethren should embrace the sisters. (Great laughter.)

The PRESIDENT said that as one of those who visited Plymouth in 1877, he could say that he had enjoyed his visit to that town very much. He hoped the visit would stir up the members in that district, and that they would have a larger number of papers from the members there at their Conference meetings. He hoped to see a large number from Belfast over at the Conference in Plymouth next year. (Hear, hear.) The Conference did not want to drift into the position that any town or city would be afraid to invite them. Through the lavish kindness of their friends they had got into that position before; but now, while the Conference would be grateful for the courtesies they received, they did not wish unduly to tax the capabilities of any town they might visit. (Hear, hear.)

The motion to visit Plymouth next year was passed amid applause.

ELECTION OF OFFICERS.

Mr. NAYLOR read out the list of officers elected for next year, as follows:—President: Mr. J. C. C. Payne, J.P., Belfast; Vice-Presidents: Messrs. Walter Hills, F.C.S., London; John Moss, F.I.C., F.C.S., London; R. J. Downes, Dublin; C. J. Park, Plymouth. Treasurer: Mr. J. C. Umney, F.C.S., London. Hon. General Secretaries: Messrs. W. A. H. Naylor, F.I.C., F.C.S., London; H. R. Ransom, F.C.S., London. Hon. Local Secretary: Mr. J. Davy Turney, Plymouth. Other members of the Executive Committee: Mr. F. C. J. Bird, London; Mr. H. Collier, London; Mr. E. H. Farr, Luckfield; Professor Greenish, London; Mr. R. Wright, F.C.S., Buxton; Mr. G. Breeze, Plymouth; Mr. G. C. Druce, Oxford; and Mr. R. W. McKnight. Auditors: Mr. H. Maitland, Stonehouse; and Mr. D. W. Elliott, Belfast.

VOTES OF THANKS.

Mr. J. L. EWING proposed, and Mr. WARDLEWORTH seconded, a hearty vote of thanks to the Rev. Dr. Hamilton, President of the Queen's College, for the use of the building for the meetings of the Conference. The motion passed by acclamation.

Dr. VICTOR FIELDEN responded on behalf of Dr. Hamilton.

Mr. MARTINDALE proposed a resolution expressing the high appreciation of the Conference of the manner in which Mr. Moss had discharged the duties of Treasurer for the past five years. In London, on 'Change, Mr. Moss was known as "Honest John." (Cheers.) Mr. Umney would now take over the money from Mr. Moss, which was not very much, he (Mr. Martindale) regretted to say, and he felt sure that Mr. Umney would also prove a good Treasurer for the Conference. (Cheers.)

Mr. Umney seconded the motion, and said he hoped he would be known as "Honest John the Second." (Laughter and cheers.)

The President said he was sure they would accept with regret the resignation of Mr. Moss, and he felt assured that the Conference would pass in the heartiest way the vote of thanks to Mr. Moss. (Hear, hear.)

The motion was passed unanimously.

Mr. Moss, in reply, said he should be something more or less than human did he not feel immensely gratified by that handsome acknowledgment of his poor services as Treasurer for the past few years. Within the last few moments they had made him a Vice-President of the Conference, and now they had overwhelmed him with thanks which he felt were utterly disproportionate to the value of the services he had rendered. If he had known some time ago that he would be made a Vice-President—a position of greater ease and less responsibility—he might have quitted the Treasurership some years ago. (Laughter.) His connection with the Conference was not of recent date, as he was at the Plymouth meeting in 1877, but this was not the time for reminiscences. (Laughter and "hear, hear.") He was not old enough to go into them yet. (Laughter.) He desired to thank Mr. Martindale and Mr. Umney for the kind words they had spoken of him, and he thanked the members generally for the cordial manner in which they had received the mention of his name.

Mr. Atkins proposed the cordial thanks of the non-resident members to the local committee, especially to Mr. J. C. C. Payne (the Chairman of the committee), Mr. McKnight and Mr. Rankin (the Secretaries), also to Dr. Fielden and Mr. Samuel Gibson (Treasurer), for the successful manner in which the various arrangements had been carried out. (Applause.) The arrangements had been most carefully worked out in advance, and most perfectly executed in every particular. (Hear, hear.) All present could look back with pleasure upon the right royal Irish welcome they had received in Belfast. (Hear, hear.)

Mr. Druce seconded the motion. He said, when it was decided to visit Belfast he had grave doubts about it. (Laughter.) There was a stormy piece of sea to cross, and he had pictured Belfast with narrow and uninviting streets, in which the weekly washing would be spread out—(laughter)—and he also thought that an abundant growth of orange would be about. (Laughter.) Instead, he found a prosperous city, with wide streets well lighted, and with a magnificent Corporation doing an enormous work in sanitary science. He knew that their sanitation was good, and he understood that the water-supply was not only magnificent, but almost unlimited; but he had not had an opportunity of using it as a beverage. (Laughter.)

Mr. Payne replied, and in the course of his remarks said he was a "Zummerzett Mon," and had his first practical experience of the Conference at Plymouth, so that he looked forward to next year, and trusted that he would be able in some measure to do justice to the duties of the Presidency.

Mr. McKnight was also called upon, and required to proceed from the back of the hall to the platform, when he made a nice speech, saying that he had been afraid up to that moment that the usual vote of thanks would be a vote of censure.

Mr. Gibson (Local Treasurer) also replied with good feeling.

Thanks to Officers.

In very feeling sentences Mr. E. C. C. Stanford moved the thanks of the Conference to Dr. Symes for his conduct in the chair during two years, and this Mr. Wells seconded with true Irish heartiness. Mr. Atkins, as Senior Vice-President, put the vote to the meeting, which was immediately and enthusiastically agreed to; and Dr. Symes, in reply, paid a handsome tribute to the zeal of the Secretaries, Messrs. Naylor and Ransom, who replied after enthusiastic cheers.

Then Mr. Payne gave the finishing touch to the proceedings by brief announcements regarding the excursion, and at 4 40 the members went to enjoy the hospitality of the Lord Mayor and Lady Mayoress at the Botanic Gardens.

It is estimated that over $32,000,000 worth of patent medicines are sold yearly in the United States.

CONFERENCE NOTES.

Sir James Haslett's speech, in proposing thanks to the President for his address, was brimful of humour, and when he said that "Irish pharmacists are equal to many and superior to all," there were roars of laughter. This was *à propos* of reciprocity, upon which he spoke out as a Unionist in the true sense of the word might be expected to speak.

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The connection between medicine and pharmacy in Ireland is wonderfully close. Half a score of men were present at the meeting who hold both medical and pharmaceutical qualifications.

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The luncheons were served in the examination-hall of Queen's College at 1 o'clock on Tuesday and Wednesday. They were hot and excellent, but the staff of waiters on the first day was inadequate. After luncheon on Tuesday the President rose (2.10 P.M.) and reminded the company that among the good things placed in the room was a clock, which showed they should have been in session ten minutes ago. He then briefly proposed the toast of "The Queen," on which subject he said he could add nothing new. She was one they all honoured and admired, and was a noble woman.

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Mr. S. R. Atkins proposed "The Lord Mayor of Belfast and the Lady Mayoress." He said no small part of the success of the Conference was due to its social side. Each year they renewed old friendships and made new ones. As mayor of a small fossilised city [Salisbury], he was amazed to hear of the extent of the duties which the Lord Mayor of the third city has to accomplish, in which he was ably seconded on the social side by the Lady Mayoress. Recognition by the civic authorities of the British Pharmaceutical Conference was a good thing for them, and he hoped they would continue to be recognised in all the towns they visited. Mr. Henderson, son of the Lord Mayor, replied to this toast, and said his father and mother would appreciate the kindness of the company in so cordially drinking their healths, and he was sure they would be awfully pleased when he told them how kindly the toast was received.

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Mr. E. C. C. Stanford then proposed the health of "The Principal of Queen's College and Mrs. Hamilton." He (the speaker) had a warm place in his heart for this college, as he recollected many years ago spending several happy days in the company of Professor Andrews, a man who did more than any other to make the reputation of the college known all over the world. The Lord Mayor had, that morning even, asked them to come again before they had quite finished coming the first time, and he sincerely hoped their refusal to come again next year would not make another "wrong" to Ireland. He (the speaker) noticed that they had present the largest company of ladies he had ever seen at a Conference. That sex was growing and winning in all walks of life; perhaps the time was not far distant when ladies would read the Conference papers, and the men be left to humbly applaud. (Laughter.)

Dr. Hamilton, in responding, said the mention of Professor Andrews's name, whenever mentioned in their college, always brought back to the listeners the heartiest enthusiasm. Professor Andrews was the greatest chemist Belfast had ever produced; he was an ardent scientific man. It was a great pleasure (Dr. Hamilton continued) for him to give the Conference the use of their rooms for their meeting; he was only sorry the visit was during the long vacation, when they had not much to show and no Professors were there. It was their first visit to Belfast, but he hoped it would by no means be the last.

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The Ladies' Committee of Belfast have made a record. They took the platform (a lovely crimson-coloured affair), as was their right, and, as soon as the dry business of Tuesday was reached, they had carriages at the door to take the ladies to Messrs. Robinson & Cleaver's establishment. There all the stages in the making of linen apparel were shown to the visitors, and it was a great treat. Mr. Claridge Druce was the first to suffer by the retirement. He immediately after had to propose the adoption of the report, and said, "Mr. President, ladies" (then turning round) "—— Alas! we have lost the sweetness of their presence."

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The *conversazione* given by the local committee in Queen's College on Tuesday evening was a splendid affair. The whole of the principal building was open to the visitors, and ample arrangements were made for the pleasure of the guests, who were received by Mr. and Mrs. J. C. C. Payne, Mr. and Mrs. Clotworthy, and Dr. Charles Symes. The local committee had captured the Lord Mayor and Lady Mayoress, the magistracy and its better part, and the municipality, besides representatives of the learned professions. Altogether the company numbered over 700, and though outside it was a trifle wet the inside arrangements for enjoyment were hearty and sumptuous.

Dr. Hamilton, in his address of welcome on behalf of Queen's College, said he did not know if the members of the Conference knew enough of Irish to understand the phrase "Caed mille failthe," which meant "a hundred thousand welcomes." That was what he offered them in the name of the College.

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The programme of the reception and *conversazione* was a very liberal one. The conductor was Mr. I. W. Nicholl, L.P.S.I., who is a chemist in business in Belfast, and the organist of a church renowned for its good music. Songs were sung by Miss Carroll, Miss Lucie Agnese, and by Messrs. Thomas M'Quitty and Valentine. There were also readings by Miss Annie Clotworthy and Mr. Diamond, and a scene from "The School for Scandal" (Sir Peter and Lady Teazle) by Miss Payne and Mr. Joseph Donnelly.

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There was one song sung in Irish to an old Irish air, and sung exquisitely, too. The Irish original of the song, we were assured, is better even than Mr. Mangan's excellent translation :—

"An Ċúilḟionn."

Translation.

By Mr. James Clarence Mangan.

THE COOLIN.

Have you e'er seen the ċúilḟionn when daylight's declining,
With sweet fairy features, and shoes brightly shining?
Tho' many's the youth her blue eyes have left pining,
She slights them, for all their soft sighing and whining.

Have you e'er, on a Summer's day, wandering over
The hills, O young man, met my beautiful rover?
Sun-bright is the neck that her golden locks cover,
Yet each paltry creature thinks *she* is his lover!

Have you e'er seen my fair, on the strand, in her bower,
With gold-ringéd hands, culling flower after flower?
O! nobly he said it, brave Admiral Power,
That her hand was worth more than all Eire for dower.

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The string band of the 4th Battalion Royal Irish Rifles, under Bandmaster E. C. McBride, performed a selection of music during the evening.

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There was a small, but very interesting, collection of old "Herbals" shown in the Council Room by Mr. R. M. Young, J.P. Perhaps the most noticeable was K'Eogh's "Botanalogia Universalis Herbernica," printed at Cork in 1735. The 1508 edition of Gerard's "Herbal," with the curious print of a "barnacle tree," and Parkinson's "Theatre of Plants" (1634) attracted much attention. There was also one of the best editions of Wecker's "Antidotarium Speciale," a book seldom seen outside the British Museum.

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Professor Letts interested an audience in the Chemistry Classroom by a demonstration on "Colour-photography," and showed a collection of results by the Joly process. Mr. John Wylie also gave a pithy lecture, with practical demonstrations, on "Interference Phenomena" in the Natural Philosophy Class-room at 10 o'clock.

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The Lord Mayor and Lady Mayoress of Belfast gave a garden-party at the Botanic Gardens on Wednesday afternoon; and over 2,000 prominent Belfast citizens were invited to meet the pharmacists. The weather was beautifully fine, and the artistic gardens, a gay company, and the music of the 2nd Battalion of the King's Regiment made the affair a pleasant relief from the pharmaceutical proceedings.

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The drawing-room concert at the Grand Central Hotel, promoted by the Ladies' Committee, on Wednesday evening, was a great success. A very pretty Irish jig was danced by Master Hicks and Miss Gillen, the novelty of which to most of the ladies made it the more appreciated. Music was contributed by Miss Lucie Agnese, Mrs. Victor Fielden, Miss Watson (Hon. Secretary of the committee), Miss Clotworthy, Miss Smithson, and Miss G. B. Savage (the last two both of Brighton). Miss Annie Clotworthy gave a capital recitation. Mrs. Clotworthy was the "Lady Chairman" to whom the smooth working of the programme was due.

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The programme of the smoking-concert, which was held simultaneously in the coffee-room, was divided into two parts. The concert began with a pianoforte solo by Mr. A. Parker, and songs were contributed by Mr. S. Smith, Mr. Fred Smith, Mr. W. Smith, Mr. E. M'Ilroy, Mr. John Mantel, Mr. J. M'Geaghy, and Mr. Jas. M'Quitty. A trio by Miss M'Ilroy, Mr. S. Smith, and Mr. J. Mantel was beautifully rendered, as was also a Liptico solo by Mr. Jas. Valentine. Mr. Diamond won enthusiastic applause for two readings he gave. The room was packed, and when at last "God Save the Queen" was reached the farewells were of such character that the visitors felt they would retain permanent recollections of their genial Irish friends.

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Dr. Gordon Sharp's paper on "Albumen and Some Types of Proteid Digestion" was not reached on Wednesday, owing to the length of the discussion on the Pharmacopœia. We intend printing the paper next week.

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"The Official Guide to the Conference" was a prettily got up booklet with white cover. The illustrations were aptly done in green ink: they were a selection of views of Belfast and the neighbouhood. The frontispiece was a half-tone reproduction of a group of the local committee. The information contained in the "Guide" was such as proved useful to the many visitors to the Conference, many of whom were visiting Belfast for the first time. The "Guide" was edited by Mr. James Tate and Mr. James Guiler, L.P.S.I.

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One of the signatures in the Visitors' Book was that of Mr. R. J. G. Aickin, son of the President of the Pharmacy Board, Auckland, N.Z. Mr. Aickin is studying medicine at Belfast.

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On Tuesday the ladies were distributing sprays of shamrock; on Wednesday heather was the decoration of the day.

Commercial Notes.

YOKOHAMA TRADE.

The total trade of Yokohama in 1897 was greater than in the previous year by 3,566,997*l.*, the exports increasing by 2,528,075*l.*, and the imports by 1,038,922*l.* Among the imports were the following :—Drugs, chemicals, and medicines, 103,519*l.*, as against 76,016*l.* in 1896; bismuth subnitrate, 26,512 lbs., value 5,624*l.*, compared with 43,584 lbs., value 6,851*l.*, in 1896; perfumery and cosmetics, 5,169*l.*; potash chlorate, 536,372 lbs., value 8,079*l.*; paraffin-wax, 7,530*l.*; bicarbonate of soda, 5,219*l.*, against 5,669*l.* in 1896; and caustic soda, 10,602*l.* Among the list of articles exported were drugs, medicines, dyes, and paints, 8,035*l.*; ginger, 13,978*l.*, against 7,029*l.* in 1896; manganese, 15,912*l.*, against 20,386*l.* in 1896; and sulphur, 6,060*l.*, as compared with 9,403*l.* in 1896.

GOTHENBURG CHEMICAL-TRADE.

During 1897 the imports of chemicals, &c., into Gothenburg were as under, the figures in brackets being those for 1896 :—Alkali, 4,234 tons [3.833]; alum, 1.520 cwt. [1,220]; white lead and zinc, 14,100 cwt. [14,480]; chloride of lime, 16,360 cwt. [20,020]; potash chlorate, 4,080 cwt. [4,620]; chemical preparations, 8,475*l* [6,666*l.*]; fennel-seed, 680 cwt. [1.120]; glauber salts, 4,364 tons [3.595]; potashes, 8,860 cwt. [12.020]; saltpetre, 1,600 cwt. [1,980]; sulphur and flowers of sulphur, 5,028 tons [5,136]; turpentine, 2,380 cwt. [2,000]. The requirements of alkali (says the British Consul at Gothenburg) mainly depend on the description of glass that the bottle and glass works have to manufacture; if white glass is on the order list, alkali must be procured, otherwise soda ash takes its place. Great Britain supplies the bulk of these products to the Swedish works, which in their turn export large quantities of bottles to Great Britain. Last year alkali was a predominant import amongst these articles. There was also a good demand for sulphate of soda, the glassworks as well as cellulose-manufacturers being the most prominent buyers. At Uddevalla a factory for the production of electrolytic caustic soda and bleaching-powder was established last year. This undertaking, however, is still in the embryonic stage, for none of the products have yet appeared on the market, and nothing has been done beyond putting up new machinery. The Consul says :—"It is hoped that success will finally attend this electrical process; if so it will be colossal, as the power and raw material are there in unlimited quantity."

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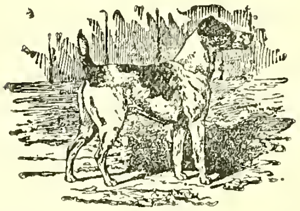

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Editorial Comments.

The Parliamentary Session.

THE fourth Session of Queen Victoria's fourteenth Parliament will be brought to a close before the end of the week. It has been a lively and in some respects a useful Session, and though foreign affairs have bulked rather largely, domestic legislation has at least been talked about pretty liberally. To pharmacists the Session has been one of unusual interest and importance. To use Mr. Carteighe's phrase, they have passed one measure and defeated another, both of particular concern to them. We do not care to raise here the question which Mr. Carteighe begged, as to the particular wing of the pharmaceutical army to which the honour of these victories was due, but we have little doubt that by persistent iteration the official body will by next May have sufficiently established the comfortable legend that both glories are their especial due. It is not necessary to trace the details of the history of the two measures referred to, as these are so fresh in the memory of all chemists. It may, however, be advisable to put on record the dates of the stages of these Bills.

The Pharmacy Acts Amendment Bill was introduced into the House of Commons and read a first time on February 24, a fortnight after some 400 members had balloted for places in the Parliamentary race. It was read a second time on

March 7; considered in Committee on March 17, May 9, and June 8. On the last date it passed through Committee without amendment, and was read a third time and passed through the House of Commons. In the House of Lords it was read a first time on June 9, a second time on July 7, considered in Committee and recommitted to the Standing Committee on July 11, reported without amendment on July 12, but on the understanding that a clause affecting company pharmacy should be added on the third reading. When this came on, on July 21, the Lord Chancellor withdrew the clause of which he had given notice, and the measure passed. It received the Royal Assent on July 25.

The Poisonous Substances Bill was introduced into the House of Lords on June 13, by the Lord President of the Privy Council. It was read a second time on June 24; passed through Committee, reported without amendment, and recommitted to the Standing Committee on June 27; reported without amendment on June 28; read a third time. with a slight amendment made by the Lord President, on July 1. On July 4 it was brought to the Commons, and on July 12 Mr. Balfour announced, amid cheers, that the Government did not intend to proceed with it this Session.

Among other measures in which pharmacists are interested the Bill to Amend Company Law has attracted considerable attention. It was read a second time in the House of Lords on February 14, and referred to a Select Committee which has met three or four times and taken evidence. The gallant efforts of the President of the Pharmaceutical Society of Ireland to attract the attention of the House of Lords to the complaint which chemists have against the usurpation of professional rights under the company laws have not had a direct success, but they have had the effect of attracting attention to the subject both in and out of Parliament, and the prospects of the grievance being remedied are at least more hopeful than they have been for many years.

Sir John Lubbock and Sir Charles Dilke re-introduced their Bills to control shop-hours at the opening of the Session, but neither of them has been heard of since. The President of the Local Government Board has shown a prudent reluctance to endorse the sweeping recommendations of the Select Committee which undertook to revise our adulteration legislation, and Mr. Chaplin has limited himself to a meaningless demonstration in respect of the adulteration of agricultural products, which was introduced on July 22, and withdrawn a few days after. Mr. Chaplin's Bills on this subject are evidently not intended for Parliamentary consumption, but are printed as a guarantee of good faith. Mr. Hudson Kearley, being in an irresponsible position, is a much more robust legislator. On the Queen's Speech he moved an amendment to the Address, and subsequently drafted a Bill on the lines of the Committee's suggestions, but it got no further than the first reading.

Mr. Chaplin's Vaccination Bill has been one of the farces of the Session. Drafted with a view of making vaccination more acceptable by the use of glycerinated lymph, it has ended by becoming a triumph for anti-vaccinators, as it practically abolishes compulsory vaccination The attempt of the House of Lords to resist the "conscientious objector" has proved futile.

The legislative line between petroleum subject to statutory restrictions and petroleum which may be sold unconditionally has been fought out by a Committee, with the result—approved, no doubt, by the public generally—that it was agreed to require the latter section of oils to be much safer than hitherto. This could be quite simply accomplished by raising the legal flash-point from 73° F. to any agreed degree. The Committee recommended 100° F. by a narrow majority. Perhaps 90° F. would have been accepted by all parties as a compromise, and we cannot help thinking that the Home Secretary has shown an unjustifiable supineness by his declaration that it was "impossible" to give effect to the Committee's recommendation within the last few weeks of the Session. Within the last few days Mr. Ure has himself brought in a Bill to deal with the subject, but it has no chance of being considered.

The Postmaster-General has at last screwed up his courage to the extent of granting Imperial penny-postage to all the colonies and dependencies of the British Empire who care to accept it reciprocally; and the Chancellor of the Exchequer has found it possible, notwithstanding enormous increases of national expenditure, to make concessions to income-tax payers up to 700*l.* a year, and to take off 6*d.* in the pound from the tobacco-duty, this last being a costly remission from which the public obtains the minimum of benefit.

Dr. Symes on Pharmaceutical Topics.

In his address as President of the British Pharmaceutical Conference, Dr. Symes has not attempted anything novel or startling. We do not know that these annual performances can take a better form than that before us. The address is a sort of commentary, or, we should rather say, a *causerie*, on topics of general pharmaceutical interest, from the pen of a man who has made his mark in his profession, who takes a keen, intelligent, active, and sympathetic interest in all its interests, and who is accustomed to discuss them. In the course of his hour's address Dr. Symes deals with Ireland and Irish pharmacy, the examinations, the Pharmacy Acts, the Sale of Food and Drugs Act, the metric system of weights and measures, the sale of carbide of calcium by chemists, synthetic products, oxidised paraffin oils, the British Pharmacopœia and its critics, and the mineral wealth of Ireland, concluding with references to Michael Conroy and Dr. de Vriy, friends and comrades who have fallen out of the ranks of pharmacy during the past year.

This comprehensive commentary offers little opportunity for criticism. It is useful and pleasant reading, and from first to last is strictly orthodox. Years ago Dr. Symes had a tendency to wander from the beaten path occasionally; when he was first elected on the Pharmaceutical Council it was feared that he might be the *enfant terrible* of the Bloomsbury family party. But he pulled himself up in time; he had sown his wild oats, and is now as faithful an exponent of the official view as any of his colleagues. It is in this capacity that he treats us to the familiar myth of the genesis of the Pharmacy Act, which is the only paragraph in his address to which we take exception. If not absolutely incorrect, Dr. Symes's brief allusion to this episode is so tinted as to convey a misleading impression. Dr. Symes says:—

> The time arrived, however, when it was felt that some kind of organisation and legislation was absolutely necessary, and it was thought that it would be better to make an effort to accomplish this for ourselves rather than to leave it to others who could not fully appreciate the requirements and position of our craft.

That would have been a sensible frame of mind to get into, but Dr. Symes is in error if he thinks that his description applies to the Bloomsbury statesmen of the pre-statute era; and if he himself does not think so, his hearers or readers will assume it. Perhaps he would say that he was referring to the trade generally, in which case his account might be accepted as fairly historical; but it bears a considerable resemblance to the stock-view religiously held in the Pharmaceutical Council—that for all the virtues of the Pharmacy

Act the Society is entitled to credit, and that all its defects are the result of the unfortunate "compromise." It is one of our duties to scotch this legend whenever we come across it. The facts are that the nucleus of the Pharmacy Act was the Bill drafted by the outside chemists, the so-called United Society; that, seeing their authority challenged, the Council of the Pharmaceutical Society prepared an alternative Bill of a hopelessly impracticable character; and that the Bill of the United Society, comprising as it did the poisons schedule, was the one which in principle was adopted. The astuteness of the Bloomsbury leaders was, however, manifested in the skill with which they assumed relationship to the accepted measure, and made themselves heirs to all its benefits.

Notwithstanding this qualification, we are glad that the President of the Conference should have directed particular attention to the importance of a study of the laws which affect the business of pharmacy—a study which has been too often neglected to the serious detriment of many of those concerned. In regard to topics of practical pharmacy, including his comments on the British Pharmacopœia, the President of the Conference is a competent guide, and his observations should be profitable to all who study them.

British Pharmacy in Belfast.

THE British Pharmaceutical Conference has met in Belfast this week, and rarely have the Fates favoured pharmacists so well. It were futile, nowadays, to write of a decadent Conference. In all the elements except membership it is a live body. The annual meetings are becoming more and more a social reunion, and it is not a bad omen that the younger generation of pharmacists are catching on to this element, which unquestionably had largely to do with the foundation of the body; but it would be wrong to say that the more serious business is allowed to retrogress. This week the programme was as rich a one as has ever been presented to a Conference meeting, and several of the papers were of high merit. The local arrangements were as hearty as big-hearted Irishmen could make them. Our report of the proceedings is a full one, although we have in some instances condensed a few of the communications in the hope that the process of assimilation may be expedited thereby, and here we present a summary and criticism of the business transacted.

CREDIT AND DEBIT.

Although the Conference is stronger by forty-five members than it was at this time last year (at present 1,013 pay yearly), the Executive pleads for a larger accession of members. This was the starting-point of the Executive's report, and the end. Between they recorded losses of two distinguished honorary members, Drs. Dragendorff and De Vry, and one popular and hard-working ordinary member Mr. Michael Conroy—all removed by death. There was also an element of regret in the resignation of Mr. John Moss, the Hon. Treasurer, who for the last time submitted a satisfactory financial statement, the year's income having sufficed to meet all expenses, with 3*l.* over—not a large balance, but sufficient for a body with practically no contingent liabilities. It is interesting to note that 500*l.* a year suffices to keep the Conference going—not a ruinous sum for the pharmacists of the British Empire to contribute, and in itself an incentive for more to come forward with active and monetary support. Another report dealt with the Unofficial Formulary Committee, who find that eighteen of their formulæ have been incorporated in the British Pharmacopœia, so that the re-appointment of the Committee was a foregone conclusion.

THE PRESIDENT'S ADDRESS.

is dealt with in a separate comment, so that we need make no further allusion to it here, beyond saying that Dr. Symes seemed as popular as always, and that his observations evidently accorded well with the general views of the pharmacists present.

THE PAPERS.

We have already stated that the papers communicated to the Conference this year were above the average in importance, and the recent publication of a new British Pharmacopœia gave several pharmacists the opportunity to present views on that matter. These were the basis of a general discussion on the whole subject.

Kieselguhr. Infusorial earths formed the subject of a paper by Mr. John Moss, Treasurer of the Conference, who described the geographical sources of the product, and gave a microscopic analysis of the various diatoms which go to make up kieselguhr. He limited the term "kieselguhr" to the variety of the earth which is obtained in Hanover, and which contains representatives of ten distinct genera of diatoms. In Scotch, Virginian, Australian, and Scandinavian infusorial earths other genera are also represented. Mr. Moss stated that after the deposits are dug up the material is well washed, then calcined to get rid of organic matter, and the "ash" forms the kieselguhr, in which from 70 per cent. to 96 per cent. of silica is found, a little alumina, iron, and organic matter also being present, with more or less water. The absorptive properties of kieselguhr were first utilised on a large scale in 1866, when dynamite was produced by mixing nitroglycerin and fossil earth together. It has recently been used in pharmacy for making dentifrices (two formulæ were given), dusting-powders, and for dispensing-purposes on account of its absorptive properties. It is better than milk sugar as a diluent of such things as euonymin.

Besides this Mr. Moss gave a lot of interesting information about infusorial earths and their technical uses, so that the communication will stand as one for reference for many a day. The only fresh points which the discussion brought out were that for filtering-purposes the dark stuff is the best (in Mr. Ransom's experience), and Mr. Martindale has not found diatomite good for dusting-powders, because it is sticky and harsh.

Eucalyptus Oil. A note by Mr. E. J. Parry on the oil distilled from the leaves of *Eucalyptus loxophleba*, which grows in Western Australia, revealed the facts that this non-commercial oil has sp. gr. 0 8828, rotation + 0·5°, and contains cineol and phellandrene, but no amylic alcohol. The cineol (eucalyptol) content is low, and the oil does not satisfy B.P. requirements.

Besides these objections the oil has a repugnant odour, which appears to be *sui generis.*

Gluten Flour. Dr. Victor Fielden has examined five samples of gluten flour sold for the purpose of making diabetic bread, and finds that the kind called "crude gluten" is especially to be avoided, as it contains fully 68 per cent. of starch and sugar, while other gluten flours contain from 7 6 to 16 7 per cent. of these undesirable elements. It appears to be impossible to entirely free wheaten flour from Fehling-reducing constituents, but the amount of these may be kept down by careful watching on the part of pharmacists, and the moral of Dr. Fielden's paper was that they should test frequently by his methods.

This being the first Irish paper, the author had a good reception, and a longish discussion without much in it followed. The consensus of opinion was that a perfectly starch-free gluten flour is not to be expected, considering the methods of preparation.

Thyroglandin. Many attempts have been made to isolate the active principle of the thyroid gland, but none of them has been completely successful. Mr. E. C. C. Stanford read the Conference a paper in which he described the various attempts which have been made in this direction, the most important of which is Bayer's patented process for producing thyroidin. This is a very expensive medicine, 6*s*. 9*d*. a grain being the price of it. Mr. Stanford has made many experiments on the thyroid, with the result that he has succeeded in freeing the body from all its active constituents and presenting these in the form of a powder called thyroglandin. This is made by exhausting the comminuted gland with water and evaporating the solution at 212° F., whereby a brownish residue is obtained. The marc is then treated with a weak solution of sodium hydrate, the liquor subsequently neutralised and evaporated. The residue is powdered and mixed with the pure-water one. The powder represents the whole of the soluble constituents of the gland in a non-putrefactive form, the dose being a trifle less than that of the fresh thyroid gland. Mr. Stanford finds that glycerin does not exhaust thyroid of its total activity. Dr. McWalter differed from him in that view, but the trend of the discussion (Messrs. Martindale, Kelly, Ball, and Symes, as well as Dr. McWalter, took part in it) was that Mr. Stanford's discovery is a good one, and Dr. McLellan's therapeutic observations support his contention that it is an active and efficient medicine.

Strophanthin. Upon the ground that strophanthin is dextro-rotatory Mr. Edward Dowzard suggests that the polariscope should be used for determining the strength of strophanthus preparations. He evaporates the tincture to a fifth of its bulk, precipitates extractive, &c., with lead acetate, filters and dilutes, then examines the solution in a Laurent's polarimeter. The factor is 0·3 gramme strophanthin in 100 c.c. = + 0° 1′.

The President, as a lover of the polariscope, rather favoured this contribution, and thought that the principle of assay might possibly and usefully he extended to other galenical preparations.

Green Extracts. The recent paper in The Chemist and Druggist by Messrs. Naylor and Bryant on ext. bellad. liq. forms an appropriate introduction to the note which they communicated to the Conference on green extracts of belladonna made from herbs grown in England. The net result of their examination of ten samples obtained from the makers was to show that the alkaloidal content varied between the limits of 0·5 and 1·5 per cent., and they advocated admixture of stronger and weaker, so as to obtain an official 1-per-cent. extract. The authors find the same disparity in specimens of henbane extract, wherein the alkaloid varies from 0·26 to 0·39 per cent. Mr. Martindale led off the discussion on this paper by saying that green extracts are not up to date, and it were better if they were replaced by alcoholic extracts of the dried leaves. Mr. Farr supported that view, and recalled Wright and Farr's observations on the subject, which showed that the juices vary greatly in mucilaginous and albuminous bodies, as well as alkaloid. The President thought experience in the preparation of cocaine from dried leaves (wherein there is a great loss) indicated that a departure from the old juice extracts should be taken with hesitation. Mr. Naylor said "ditto" in effect.

Alginoids. We recently described the wonderful hæmatinic effects of iron alginate, a salt made by Mr. E. C. C. Stanford, which Dr. McLellan, of Glasgow, has tried in chlorosis and anæmia associated with gastric ulcer, with excellent results. Mr. Stanford now described the properties of a series of alginates—arsenic, antimony, bismuth, &c.—which seem to be particularly servicable for administration in cases where intestinal, rather than stomachic, assimilation is desired. Dr. Symes, Mr. Martindale, and others seemed to be impressed with the utility of the new compounds, and the discussion brought out interesting suggestions.

Lemon Oil. Two papers were contributed on oil of lemon one by Mr. Idris, the other by Messrs. J. C. Umney and Ralph Swinton. The former was on the "concentrated" oil, and was topical in the sense that it was communicated to a meeting held in so noted an aërated-water making city under the presidency of a pharmacist whose reputation as a student of essential oils Mr Idris neatly brought forth. After speaking in general terms of the constituents of lemon oil, Mr. Idris pointed out that the rapid decomposition of the oil, especially in aqueous solution, is due to the terpene limonene, and the elimination of this body has led to the production of concentrated oil. Mr. Idris has examined some of the commercial concentrated oils, and has found them to be mixtures or solutions of oil of lemon, citral, lemongrass oil, ethers, &c., with alcohol; but this statement does not apply to "terpeneless" oils, and the object of the note was to show how these can be made by fractional distillation. From 6 to 7 per cent. of a pure terpeneless oil can so be obtained.

Messrs. Umney and Swinton's paper dealt with a new constituent of lemon oil. They have observed that ordinary concentrated lemon oil lacks a certain pleasant odour, which one carefully prepared under reduced pressure has. The fine characteristic of the latter they find to be due to the presence of an ester of geraniol, so that this body must be added to citral and citronellal as essential odorous constituents of lemon oil.

Mr. Umney's paper was the first to be read, and Mr. Parry (who read Mr. Idris's) said it was the most important paper on the list, as the discovery of the geraniol ester may suffice to lead chemists to see that the citral standard is a bad one, since the true odorous property of lemon does not reside in it, and the possibility of adding citral from other sources to lemon oil favours fraud.

Dill and its Oil. In a paper communicated to the Pharmaceutical Society of Great Britain, in March of last year, Mr. J. C. Umney described six varieties of dill-fruit, two of which (English and Indian) have chiefly been used in this country. Japanese fruit has since reached this country in considerable quantity, and the present paper dealt with the oils distilled from five kinds of dill—viz., two grown in England, and one each from Germany, India, and Japan. The German fruit is substantially the same as the English; so is the oil distilled from it, the chief differen being in the amount of the oil which distils below 200° C.—the German giving 53 per cent., and the English 21 and 22 per cent., while the sp. grs. are ·9002 and ·9146 to ·9143 respectively. The oil from Indian dill is very different, the sp. gr. being ·9436, distillate below 200° C. 24 per cent., and optical rotation +47·5° (German and English between +70° and +80°). The oil from Japanese dill has sp. gr. ·96[illegible]3, opt. rot. +50·5°, and distillate below 200° C. 21 per cent. Above 230° C. the Indian oil yields 39 per cent. and the Japanese 49 per cent. The carvol content of the oils was not precisely determined, but this body's boiling-point is 224° to 226° C., and the following are the percentages of the different oils which distilled at 220° to 230° C.:—English 46-50, German 17, Indian, 10.5, Japanese 8. Obviously, therefore, the last two fruits should not be used for making dill-water, and although the author did not exclude the German, his figures indicate the exceptional superiority of the English fruit.

This paper raised a curious side-light discussion on the influence of situation in plant-constituents, which showed that some traditional beliefs need overhauling.

Irish Flora. Mr. G. Claridge Druce, of Oxford, is one of the happiest botanists with whom British pharmacy has ever been gifted. Last year at Glasgow, in a few minutes he sketched to those who might desire to investigate the flora of Caledonia the beauties and the rarities which they might expect to find if they traversed hill and glen, and now at Belfast he has told a similar audience what they would find in Erin. Two Fahrenheit degrees less of temperature, and a trifle less sun put Ireland in a bad position. In some parts of the Green Isle, says Mr. Druce, owing to these circumstances, wheat is unknown, and from that fact the differences between the flora of the island and that of Eastern Britain may be surmised. Ireland has fewer plants "made in Germany"—twenty as compared with Great Britain's 130—in short, 800 species of plants are found on this side of the Irish Channel which are not found on the Irish side—an injustice to Ireland which no Parliament can remedy. But Ireland has three-and-twenty species which are not found in Great Britain, and these Mr. Druce detailed in his interesting communication.

Ginger Extract. "Gingerin" is an alcoholic extract of ginger, but Mr. T. H. W. Idris finds that acetone is as good a menstruum as alcohol, and in several respects it is a more desirable method of making gingerin to exhaust the powdered drug with acetone and evaporate the percolate. The resulting extract dissolves in spirit, and essences or tinctures for pharmaceutical and aëration purposes may be made with it which are as good in flavour and pungency as those prepared in the old-fashioned way.

Materia Medica Animalis. Dr. J. C. McWalter's paper on the parts of animals which have of recent years come into use in medicine was correctly described by Mr. Stanford as one incapable of adequate abstracting. Dr. McWalter described the location, structure, and supposed physiological objects of various glands, &c., which have been proposed for medicinal purposes, and supplemented these medical points by a number of pharmaceutical hints as to the best preparations for administration. We report the paper fully. It gave Mr. Stanford the opportunity of showing a specimen of thyroiodin made from glands from which Dr. Hutchinson's colloid had previously been extracted, showing that the colloid does not represent the full activity of the glands.

Ferrum Redactum. In nine out of fifteen samples of ferrum redactum Mr. E. Saville Peck has found arsenic. Therefore he suggests that the B.P. should provide against this. In his examination of the samples several interesting points were brought out, and a comparison of the B.P. copper-sulphate method and the U.S.P. mercuric-chloride method of determining free iron showed that the former invariably yields higher results, but the reason for this was not elucidated. The best samples of reduced iron are those of a silvery-grey colour, and this, with the absence of brown masses, may be taken as a rough indication of good quality. Black samples should be avoided.

It transpired during the discussion that both arsenic and sulphur are difficult to get rid of, and that the yield of iron in the assay is affected by (1) the amount of copper-sulphate solution used, (2) the degree of agitation, and (3) the washing of the precipitated copper. Mr. Martindale stated on the last point that the B.P. has made a slip in omitting directions for washing.

Hypophosphites. The literature of the medicinal hypophosphites receives a valuable addition through the contribution by Dr. H. A. D. Jowett of the results of an investigation in the Wellcome Research Laboratories on the various tests which have from time to time been proposed for these salts. The paper began with a summary of the literature on the subject, the more notable papers published since 1816 being dealt with. From this it appears that previous observers have erred in estimating the salts by not ensuring complete removal of phosphite, with the result that in many instances it has been reckoned along with hypophosphite. He finds that phosphite is readily and completely removed by precipitation with lead acetate; the solution is then freed from excess of lead with sulphuretted hydrogen, and the filtrate is oxidised into phosphate by means of bromine or chlorine, and the resulting phosphate estimated gravimetrically or volumetrically. Incidentally, Dr. Jowett criticised the B.P. tests, showing that the permanganate-assay method is inaccurate. He showed the suitability of the proposed method for sodium, potassium, calcium, magnesium, barium, and iron hypophosphites. Regarding the last, he came to the conclusion that ferric hypophosphite is better than the ferrous salt for pharmaceutical purposes. The paper concluded with reports on commercial specimens (American were the best), and suggestions for pharmacopœial tests, which embodied a simple quantitative test—viz. (in the case of $NaPH_2O_2$), to add to a solution of 1 gramme of the salt in 10 c.c. water, 9 c c. of 1-per-cent. lead acetate solution, filtering in half an hour, and on adding more lead acetate to the filtrate the mixture is clear if the salt contained 96 per cent. of $NaPH_2O_2$.

A brief but appreciative discussion followed.

Basicity of Quinine. Mr. D. Lloyd Howard contributed the next paper, one by his father, Mr. David Howard, and himself, on the basicity of quinine. Chemists connected with pharmacy are sometimes not quite sure whether it is dibasic or tribasic. The authors say that everything points to the conclusion that quinine is a "diammonia," and this statement is supported in the preparation of ethyl and methyl derivatives, and the formation of salts. They took up the international aspects of the question, and made some interesting statements regarding the acidity of quinine-salts.

After this the Pharmacopœia-papers came on. There were half a dozen of them, and the next paragraphs give the gist of them.

Pharmacists and the B.P. As an opening to the series of papers on the B.P., Mr. Peter MacEwan read one in which he suggested that pharmacists should have a voice in preparing the work, and pointed out that the General Medical Council could grant that power without fresh legislation. The point of the paper, however, was that the Pharmaceutical Societies are so largely administrative bodies that they should delegate practical matters of this kind to the Conference, and that the latter should appoint a committee representative of all British pharmaceutical interests, such as the United States Convention for the revision of the Pharmacopœia of that country.

B.P. Galenicals. "The Pharmacopœia of 1898 is essentially a wholesalers' Pharmacopœia," said Mr. H. Wippell Gadd on Wednesday, and that hit the mental summation of many an older pharmacist than the young man from Exeter. He commended the exclusion of "engine-waste" (*ex-syn.* aqua destillata) and the recognition of the several alcoholic menstrua; then proceeded to comment in a suggestive manner upon a large number of the galenicals, most of the remarks being the outcome of practical experience. These notes cannot usefully be more briefly summarised than they are on page 309. Mr. F. C. J. Bird's communication on the same subject was more elaborate, but he also, as a wholesaler, was able to say that many of the new processes can be conveniently carried out on the large scale only. After referring to some generalities, Mr. Bird proceeded to discuss several of the groups of galenicals. These are his conclusions as to formulæ:—Ext. casc. sag. liq., "a boon to the laboratory-worker"; ext. bellad. alc., not "a perfect galenical"; ext. ergot. liq., "leaves little to be desired"; ext. glycyr. liq., "one of the greatest improvements"; ext. pareiræ liq., "workable." The methods for liquores concentrati are "not so perfect as those followed commercially," but "on the whole successful." Nothing new was said about spirits, but as to syrups, regret was expressed that Parrish and Fellows are not represented in the B.P., as also syr. ferri brom. and syr. picis. "A great advance" is syr. sennæ; tinct. rhei "is the only tincture containing glycerin percolated from a crude drug," and "is a decided success." The formula for ung. hyd. nit. "does not in all cases give a perfect result." It is evident from a perusal of these papers that the authors were considerably handicapped by the thorough manner in which Mr. J. C. Umney has dealt with their subject in the series of papers contributed to this journal. Mr. H. L. Doran, of Bray, also contributed some observations on the same subject.

B.P. Chemistry. Mr. Patrick Kelly, a well-known Irish pharmacist, commented upon the chemistry of the Pharmacopœia, dealing, however, with first principles generally, and calling attention to the alterations in atomic weights, chemical formulæ, new tests, and new methods.

Materia Medica Nomenclature. Mr. G. C. Druce's paper on "The Nomenclature of Certain Drugs of the Pharmacopœia" was the work of a very practised botanist. The author suggested names for various drugs which he contended should be used on account of priority. The priority of the suggested names was clearly established, the chapter and verse of the works quoted being given. The paper is one which should be of great use to the compilers of the Pharmacopœia, as it was full of technical and rare knowledge.

Lime-water. Between these papers and the B.P. discussion came luncheon, and a paper on lime-water by Mr. E. J. Evans, who showed that it would be much better to use a quantity of lime nearer the amount which the water will dissolve. So doing, the water is quickly made, it is just as good, and the element of uncertainty is absent.

Effervescent Preparations. A useful piece of work was reported upon by Mr. C. S. Dyer, who, by experiments, has proved that the B.P. effervescent preparations yield only 60 to 70 per cent. of the carbonic-acid gas which they should do, judging by the amount of sodium bicarbonate put into them. The loss is practically equivalent to the amount of bicarbonate which would combine with the citric acid present, and Mr. Dyer suggests that there is no free citric acid in the salts. He thinks that specimens which show less than 50 per cent. of the bicarbonate put into them should be rejected.

Pharmacopœia Debate. The speakers in the debate on the Pharmacopœia were in some instances uncommonly tedious. Mr. Atkins, while agreeing that pharmacists should have a statutory position in revising the work, urged that *the* Pharmaceutical Society, and not the B.P.C., should be the body charged with the task. Mr. J. C. Umney criticised a number of technical points in the official formulæ; and was followed by Mr. D. Lloyd Howard, who, speaking as a chemical-manufacturer, claimed that that class should be recognised, and gave many instances in B.P. tests to show how advantageous it would be if the makers of chemicals were consulted. He advocated limitations in qualitative tests such as the U.S.P. adopts. Mr. Wardleworth spoke on the new cream of tartar; Mr. Farr on several of the points upon which he and Mr. R. Wright are recognised authorities; Mr. J. R. Hill condemned the new atomic weights; Mr. W. F. Wells said a word for the Pharmaceutical Society of Ireland as a helper in Pharmacopœia matters, and had the sympathy of the meeting in his advocacy of its claims, while he showed by omitted preparations that the lack of an Irishman on the committee was apparent. Mr. Cowley dealt with ext. bellad. liq. and some other galenicals; and Mr. Martindale replied at length to the criticisms, letting in some light (but not too much) on the reasons for things. Finally, the President strongly claimed that pharmacists should have the statutory recognition demanded. The discussion was the feature of the Conference and was seldom prosy; indeed, the humour of contributors and speakers gave the debate a sparkle which rarely is seen in a technical discussion. The debate was an attempt to find whether a set subject could be made an annual feature of the meetings. We think it was a success, and if a good topical subject is found next year and made the programme for the morning session of the second day it will be a splendid attraction.

Albumins and Digestion. A suggestive note was contributed by Dr. Gordon Sharp, but not read, on the probable constitution of albumins. It seems that serum-albumin may be a sodium albuminate and egg-white a calcium albuminate. The sodium salt is more easily digested than the calcium compound, and altogether the latter is more difficult of decomposition. The author subjected mixtures with water of each albumen to bacterial putrefaction, and found that in neither case was peptone formed, but albumoses, those from serum being of higher series than those from egg-albumin; nor did papain yield peptone, but pepsin did.

Finale. Plymouth for 1899 and London for 1900 is the order of the day. Mr. J. C. C. Payne was elected to succeed Dr. Symes in the Presidency—a popular choice. Mr. Payne is a Somerset man, a good pharmacist, has extensive public experience, is popular in the Conference, and is the man for the position. Thanks to everybody, drawn out to inordinate length, but necessary recognition of honest and often too thankless work, concluded the proceedings, and the members left Queen's College assured that Belfast had been bracketted with Glasgow in breaking the record of the British Pharmaceutical Conference. Feeble as the body may seem in black and white, one has only to be present at these annual meetings to feel how good it is as a stimulant to good feeling in pharmacy; and rarely, may we add, has a local committee been so effective in hiding itself, yet making everyone feel at home and pleased, as the Belfast Committee have done on this occasion. They have been beaten only by their Ladies' Committee.

THE PHARMACEUTICAL SOCIETY OF IRELAND AND "THE CHEMIST AND DRUGGIST."

Surely nobody in the United Kingdom supposes that the Pharmaceutical Society of Ireland, or its Council, or any individual connected with it is in the smallest degree responsible for any editorial article which may appear in this journal. The President of that Society has thought it necessary to condemn a certain article published in our issue of July 30 on the Lord Chancellor's withdrawn amendment to the Pharmacy Bill; and he calls upon the Council to dissociate themselves from it "because it appeared in the organ of the Society, and they would be credited with what was said if they did not do so." We have a contract with the Pharmaceutical Society of Ireland to supply THE CHEMIST AND DRUGGIST to all the members of the Society; we have committed ourselves to nothing whatever beyond that; and we wish to state most emphatically that no Society in Ireland or Great Britain or any other part of the world is rich enough to buy the editorial opinions of this journal. That should suffice as a reply to Mr. Downes's comments on the official position. The actual disagreement is of far less importance from our point of view. We are not at all surprised that many chemists dissent from the views expressed in the article; at the same time, we have abundant testimony that many do not. We still hold the opinion that the representatives of pharmacy were ill-advised when they missed the opportunity offered them by the action of the Lord Chancellor and Lord Herschell. They will be very lucky if such a chance ever comes to them again. Of course we did not endorse the Lord Chancellor's amendment: we expressly said that "the clause as drafted by the Lord Chancellor would not have met the legitimate claim of pharmacists." In all fairness, Mr. Downes should not have omitted that little sentence when he quoted so much of the article. By so doing he and the other councillors who spoke made it appear that THE CHEMIST AND DRUGGIST had supported the amendment, and had complained of the Pharmaceutical Society for not supporting it. What we complained of, and what we still regret, is that the Pharmaceutical Society of Great Britain did not seize the splendid opportunity offered them to secure if possible the amendment of their Act, which they profess to have so urgently desired for the past twenty years.

THE SPECTACLE MAKERS' COMPANY'S EXAMINATION.

We have received from Colonel T. Davies Sewell, clerk to the Spectacle Makers' Company, a copy of the prospectus which the company have prepared in respect to their proposed examination. The prospectus states that all persons, whether principals or assistants, who conform to the regulations and pass a specified examination, will be admitted to the Guild and be granted a diploma of membership. The examination is to be of a theoretical and practical character, and candidates for it must be approved by the Optical Committee of the Company on the recommendation of two well-known members of the craft. In very exceptional cases distinguished opticians may be excused the examination, but diplomas will not be conferred without the names being submitted and approved of by two-thirds of the professional members of the Company A modified examination is available for masters or assistants who have already been seven years in the optical business. These exceptions will hold good until July 1, 1899, after which date the full syllabus must be undertaken. The subjects for examination are arithmetic and algebra; trigonometry; heat; light; optical instruments; optics relating to vision; practical work in visual optics and with optical instruments; optical lenses; the optical bench; and one only of the following optional subjects: the camera, the microscope, or the sextant. The first examination will be held at the Northampton Institute, Clerkenwell, E.C., in November next, and will be principally for those who are qualified for the modified syllabus. All desiring examination must either be actual freemen of the Company or must undertake to become so when passed by the examiners and approved by the committee. There is no age limitation for the examination, but the freedom and diploma cannot be given to anyone under 21. No examination-fee will be charged; the 30*s.* paid for the freedom (*plus* 3*l.* for Government stamp-duty) covers the total amount of payment reqnired. Full particulars as to classes, lectures, meetings, and books recommended, together with a list of freemen and members of the Court of the Company, may be obtained on application to Colonel Sewell Davies at the Guildhall.

SYNTHETIC ALBUMEN.

The closing day of the International Congress of Chemistry was reserved for the announcement by Dr. Lilienfeld that he had succeeded in effecting the synthesis of albumen. Dr. Lilienfeld is a young man, an Austrian-Pole, who took his degree at Berlin University, where he worked at the Physiological Institute under Professor Du Bois Reymond, the celebrated German physiologist. Just how the synthesis has been produced we are not able to say from the reports to hand, but it is said to be a simple and rapid process. It is a condensation-product in which phenol and amido-acetic acid are used, phosphoric oxychloride being the condensing-medium. The importance of the discovery is very great when we take into account the fact that albumen is such an essential part of the human economy. There are already prophets about who foresee that the race for life will be lightened in the future, when we shall be able by the use of a small quantity of the new artificial albumen to sustain life more cheaply than at present. It is possible, however, that the present-day form of dinner will long survive if only for the excellent opportunity it affords for our political friends to let off some of their superfluous oratory.

New Books.

Any book named in this list can be supplied post-free to any part of the world on receipt of the published price by the Publisher of THE CHEMIST AND DRUGGIST, 42 *Cannon Street, London, E.C.*

Brown, W. L. *A Manual of Assaying Gold, Silver, Copper Tin, and Lead.* Revised, corrected, and enlarged. Pp. 368 12mo. $6\frac{7}{8} \times 4\frac{1}{2}$. 7*s.* 6*d.* (Heinemann.)

Furbringer, Professor Dr. Paul. *Kidney and Genito-Urinary Organs (The)—Text-book of Diseases of.* Trans. from German by W. H. Gilbert. In 2 vols. Vol. 2. 8vo. 10*s.* 6*d.* (Lewis.)

Lahmann, H., M.D. *Natural Hygiene; or, Healthy Blood the Essential Condition of Good Health, and How to Attain it.* A treatise for physicians and their patients on the predisposition to and prevention of disease. Pp. 262. Crown 8vo. $7\frac{1}{2} \times 4\frac{7}{8}$. 4*s.* 6*d.* (Sonnenschein.)

Lewis, Dr. P. G. *Spinal Curvatures—the Relief and Cure of.* Pp. 220. Crown 8vo. $7\frac{1}{2} \times 4\frac{3}{4}$. 4*s.* 6*d.* (Bale.)

Phipson, Dr. T. L. *Health Notes and Curiosities of Medical Science.* $7\frac{3}{4} \times 4\frac{7}{8}$. Pp. 220. 2*s.* (Routledge.)

Retrospect of Medicine. Edited by James Braithwaite. Vol 117. $7\frac{1}{2} \times 4\frac{3}{8}$. Pp. 452. 6*s.* 6*d.* (Simpkin.)

Rideal, S. *Practical Organic Chemistry: the Detection and Properties of Some of the More Important Organic Compounds.* 2nd ed. $6 \times 3\frac{7}{8}$. Pp. 172. 2*s.* 6*d.* (Lewis.)

Rose, T. K. *The Metallurgy of Gold.* Edited by Professor W. C. Roberts-Austen, C.B. Illust. (C. Griffin.)

School Calendar and Official Guide to Examinations and Open Scholarships, 1898–99. 12th year. 12mo. $6\frac{5}{8} \times 4\frac{1}{8}$. Pp. 312. 1*s.* net. (Whittaker.)

Simmonds, P. L. *The Dictionary of Trade Products, Manufacturing and Technical Terms, Moneys, Weights, and Measures of all Countries.* New ed., enlarged. $8 \times 5\frac{1}{4}$. Pp. 518. 2*s.* 6*d.* (Routledge.)

Stewart, T. G. *Lectures on Giddiness and on Hysteria in the Male.* 2nd ed. Crown 8vo. $7\frac{5}{8} \times 4\frac{7}{8}$. Pp. 100. 2*s.* 6*d.* net. (Pentland.)

Thompson, G. F. *Acetylene-gas; its Nature, Properties, and Uses.* Crown 8vo. 3*s.* 6*d.* net. (Spon.)

Thomson, J. *Guide to the Clinical Examination and Treatment of Sick Children.* 52 Illust. $7\frac{7}{8} \times 5\frac{1}{8}$. Pp. 352. 9*s.* (W. F. Clay.)

Thornton, A., and Pearson, M. *Notes on Volumetric Analysis.* $9\frac{1}{4} \times 5\frac{5}{8}$. Pp. 80. 2*s.* (Longmans.)

Trade Report.

Notice to Retail Buyers.

It should be remembered that the quotations in this section are invariably the lowest net cash prices actually paid for large quantities in bulk, and, for crude drugs, without charges. For fuller particulars see the article "Lowest Trade Terms" in The Chemist and Druggist, March 19, 1898, p. 473. *C.i.f. quotations are for London unless when otherwise stated.*

Buyers of essential oils are particularly requested to note that low quotations, especially for Sicilian essences, are rarely, if ever, accompanied by guarantee of genuineness.

THE Mincing Lane drug and chemical markets are still under the influence of the holiday season, and there are few changes which require to be reported upon. Buyers are awaiting the heavy drug-auctions next week. The subjoined table summarises the principal alterations:—

Higher	Firmer	Lower
Acid, citric	Canary-seed	Gentian-root
Cocoa-butter	Cascara sagrada	Henbane
Menthol	Coca-leaves	Oil, castor
Oil, bergamot	Ipecacuanha	Pepper, black
Oil, clove		Potash, permang.
Pimento		Soda, caustic
Saffron		Soda, chlorate
		Sugar of milk (American)

Cheshire Salt-trade.

The official returns of the Cheshire salt-trade show a rather serious depression during July. The exports and coastwise shipments reached 55,000 tons compared with nearly 73,000 tons last year. Liverpool alone has fallen off to the extent of 10,000 tons, and Runcorn and the Manchester Ship Canal show a reduction of almost 8 000 tons. The year's grand total to date is 376,000 tons, against 380,000 tons in 1897.

The Board of Trade Returns.

The monthly statistics relating to our national commerce for the month ending July 31 are by no means refreshing reading. As regards the imports, they show a decrease of 220,484*l*, nor are the exports of British and Irish produce more satisfactory as they too show a decrease of 1,411,574*l*. For the month the imports are returned at 35,903,039*l*. The only increases are those under the headings of articles of food and drink and raw materials for textile manufacturers. On the other side of the account there are decreases (among others) of 12 523*l*. in chemicals, dye-stuffs, and tanning-substances, and 101 192*l*. in oils. For the seven expired months there is a decrease of 491,960*l*. on chemicals, dye-stuffs, and tanning-substances. The exports for the month are given at the declared value of 20,089 878*l*. The only improvement to be noted is under machinery and chemicals, the latter showing an increase of 7 626*l*. for the month, although there is a serious decrease of 232 233*l*. for the seven months. Alkali and chemical manufactures in the imports show an increase of 19 659*l*., borax 15,831*l*., coal-tar dyes 13,077*l*, while sulphur, saltpetre, and indigo show a decline. In the exports of chemicals we find a decrease of 29,400*l*. on alkali, 1,678*l*. on bleaching-materials and 6,291*l*. on medicinal preparations, the only articles showing increases being sulphate of copper 612*l*. and chemical manure 36,522*l*.

American Markets.

New York, August 2

All prices, unless otherwise stated, are New York spot quotations.

The drug-market has been comparatively quiet during the past week, but business generally has been fairly satisfactory and the outlook continues favourable. The demand from consumers continues steady, and there is an absence of speculative demand.

Balsams.—Copaiba is easier and quotations are somewhat nominal, at 40c. to 42c. for good quality Central American. Tolu is steady at 33c. to 35c., with little demand, and Peru is quoted at $2.05 to $2.15.

Buchu-leaves.—Short are in good demand and prices are hardening, 12c. being now the lowest quotation for ordinary; for prime quality 13c. to 15c. is asked.

Beeswax is in plentiful supply, and quotations are nominal, at 28c. to 29c. for ordinary pure.

Citric Acid is in seasonable demand, and prices are firmly maintained, 36c. being asked for crystals.

Chamomile-flowers. Old stock can be bought at 10c. in quantity. For new crop 25c. to 36c. is asked, according to quality.

Golden-seal (Hydrastis).—Stocks on the coast are limited, but there seems to be plenty in the interior. The spot quotation is 37c. in quantity.

Senega-root is in a strong position, and offerings are very limited. The season has been unusually wet, and it is reported that but little has been doing. Quotations are nominal, at 25c. to 26c.

Peppermint Oil continues steady, but the demand is very light and prices remain unchanged. In the producing districts the feeling is stronger, and distillers say they expect to realise 25 per cent. more for this year's crop over last year's prices.

Quinine continues in good demand and quotations are very firm, dealers declining to shade 20c. even on large orders.

Opium is quiet, but firmly held; $3.75 is the lowest figure accepted for case lots, and $3.80 is asked by some holders. The jobbing price is $3.80 to $3.90.

The Liverpool Drug-market.

Our Liverpool correspondent, writing on August 10, reports that in castor oil there is little or no change in the quotation prices, but forward sellers show more disposition to part with the oil, while on the spot importers exhibit increased firmness, and the value of good seconds Calcutta is now $3\frac{1}{4}d$; first-pressure French, 3*d*. to $3\frac{1}{16}d.$; second-pressure French, $2\frac{7}{8}d.$ to $2\frac{15}{16}d.$, and Madras good seconds, 3*d*.

Scammony-root.—Forty bales of a recent import were offered at auction, but no bids were forthcoming; the owner's idea of value was 25*s*. per cwt.

Canary-seed.—After a long season of stagnation, the recent signs of upward movement are confirmed, and sales have been offered at 28*s*. for 300 bags of good Turkish, and now holders talk of 30*s*. per qr. for similar quality, and even better prices in the near future. Importers can get no offers of forward parcels.

Honeys maintain a firm position for all grades. Continued reports of short crop in California come in, and fair set has changed hands at 35*s*. per cwt., and 40*s*. is asked for liquid amber and white set. Chilian and Peruvian are firm, but not quotably changed.

Fenugreek-seed shows no indication of receding further, and recent arrivals are held for 9*s*. per cwt. Egyptian, 12*s*. 3*d*., fine Morocco.

Balsam Copaiba.—In the absence of demand stocks are somewhat accumulating, and recent quotations may be considered nominal.

Spermaceti, Chilian, is held for 1*s*. 2*d*. to 1*s*. 3*d*., and an arrival of 41 cases is reported by steamer just in.

Sulphate of Copper is steadily improving in position, and the value now ranges from 16*l*. 12*s*. 6*d*. to 16*l*. 15*s*. per ton.

African Ginger is meeting with more inquiry, and business will probably result at 17*s*. 6*d*. to 18*s*. per cwt for some parcels now held in treaty.

Cod-liver Oil, Newfoundland.—Only a small quantity is obtainable at 2*s*. 9*d*. to 3*s*. per gallon, and importers hold out no hopes of fresh arrivals at present rates.

Gums.—Arabic sorts are in quiet request, with sellers at 70*s*. to 80*s*., but a very small business is passing. Medium kinds share the general inactivity, only limited sales of Niger having been made, without any change in the price.

Heavy Chemicals.

There is very little alteration in the condition of the heavy-chemical trade, either as regards the general demand or existing values. Shipments on the Clyde have been somewhat heavier whilst those on the Tyne remain about the same. General business in the Lancashire district is rather quiet, and some of the miscellaneous products have a rather easier tendency. It is to be hoped, however, that a better feeling will soon be apparent, and a fuller demand be experienced from the States at an early date.

Alkali Produce.—Caustic soda quiet, and values tend a shade lower. Present figures are about as follows:—60 per cent., 6*l.* 2*s.* 6*d.* to 6*l.* 5*s.*; 70 per cent., 7*l.* 2*s.* 6*d.* to 7*l.* 5*s.*; 74 per cent., 7*l.* 15*s.* to 7*l.* 17*s.* 6*d.*, all f.o.b. Liverpool; and 76 to 77 per cent., 8*l.* 5*s.*, f.o.b. Liverpool or Tyne. Soda crystals are firm at 2*l.* 17*s.* 6*d.*, f.o.b. Liverpool, and 2*l.* 12*s.* 6*d.*, Tyne. Saltcake in heavy demand and scarce, and value is well maintained at 25*s.*, free on rails, in bulk. Chlorate of potash firm at 3⅜*d.* per lb., London and Liverpool. Chlorate of soda has declined slightly, and now stands at 3½*d.* Bleaching-powder very quiet at 5*l.* to 5*l.* 5*s.*, free on rails, for softwoods, and 5*l.* 5*s.*, f.o.b. Liverpool.

Sulphate of Copper.—Quieter. Liverpool, 16*l.* 10*s.* to 17*l.* Anchor, 17*l.*

Barium Products in fairly good consumptive demand, and values, on the whole, are moderately well maintained. Chloride crystals, best refined, 6*l.* 17*s.* 6*d.*, free on rails, in bags. The precipitated sulphate (blanc fixe) 6*l.* 16*s.* 3*d.* to 6*l.* 18*s.* 9*d.*, f.o.b. Tyne. Sulphate of barium crystals, in barrels, 4*l.* 17*s.* 6*d.*

Alumina Products.—Carbonate and chloride quietly steady at 40*s.* per cwt. Hydrate of alumina, high strength, 12*l.* 10*s.*, free on rails. Bauxite, 60 per cent. alumina, [illegible] f.o.b. Alumino ferric, in brisk request, 42*s.* 6*d.* Sulphate of alumina in fair demand; best white lump 75*s.*, and crushed 77*s.* 6*d.*, f.o.b.

Sulphocyanides.—Quiet. Barium, 95 per cent., 4*d.*; ammonium, 95 per cent., 5¾*d.* to 5⅞*d.*; and potassium 6½*d.* Sulphate of ammonia firm. Beckton, 9*l.* 10*s.*; October-December, 9*l.* 7*s.* 6*d.*; January-March, 9*l.* 10*s.* Beckton terms, prompt, 9*l.* 8*s.* 9*d.*; Hull, London, and Leith, all about 9*l.* 12*s.* 6*d.*

Nitrate of Soda.—Fairly firm, but, if anything, rather easier tendency. Ordinary 7*s.* 6*d.* to 7*s.* 7½*d.*, and refined 8*s.*

Benzols are dull and lower; 50 and 90 per cent. both stand at 9*d.* to 9½*d.*

Phosphorus.—In good request. Amorphous, 2*s.* 8½*d.* per lb. Wedges 2*s.*, and sticks 2*s.* 1*d.*

American Peppermint-crop.

Mr. Albert M. Todd, the well-known essential-oil distiller and grower, of Kalamazoo, Michigan, U.S.A., in a letter to us dated July 27, writes as follows:—"I have to advise that on the nights of July 9 and 10 severe frosts occurred throughout the producing-districts of Michigan (where fully two-thirds of the peppermint oil of the world is produced), inflicting serious damage, entirely destroying some fields and injuring nearly every field in a greater or less degree. Indeed, immediately after the frost it looked as though the damage might be 50 per cent. of the entire crop, and it would have been as great as this had not some rains soon after occurred, which aided in reviving the plants and causing new leaves to start where sufficient life yet remained. In consequence of these rains the damage will not be so great as at first feared, yet I judge it will still be about 25 per cent. of the crop.

"There was a smaller acreage planted this year than last of 'new mint,' and some of the 'old' (the planting of preceding years) was killed by dry weather last fall, so that the total area which will be distilled this year will be less than last year. Hence it would seem impossible that as great an amount of oil could be distilled this year as last, which was exceptionally large in the aggregate produced.

"Owing to the extremely low price which prevailed last year, many growers found the industry unprofitable, and have neglected the usual cultivation of their fields, some of which have become overgrown with weeds, so that a large amount of the oil this year will be of inferior quality (more so than usual), and much greater care will need to be exercised by consumers in their purchases."

Hamburg Drug-market.

Hamburg, August 9.

Business in general is quiet, and the drug-market does not show much life.

Aloes (Cape) is very firm, at 53m. per 100 kilos; stock is small.

Balsam, Copaiba.—The stocks here are very large, about 400 cases, but importers are firm.

Citric Acid is firm and dearer, at 270m. per 100 kilos.

Camphor remains quiet, at 225m. per 100 kilos for refined.

Condurango-bark is flat, at 43½m. per 100 kilos.

Cascara Sagrada.—Firm and scarce, at 41m. per 100 kilos.

Coca-leaves.—Bolivian are quoted at 195m. per 100 kilos.

Gentian is easier, at 39m. to 40m. per 100 kilos.

Honey.—Very firm, Chilian 22½m. to 25m. per 50 kilos.

Menthol is advancing, and a good business has been done: to-day's quotation is 15m. to 15½m. per kilo.

Opium is firm, at 23¾m. to 24m. per kilo.

Quinine.—Unchanged and quiet, at 26m. per kilo.

Quillaia.—Natural, 36m.; cut bark, 46m. to 47m. per 100 kilos.

Ipecacuanha, Rio, is very scarce, and stocks are almost exhausted.

Wax, Japan.—Quiet, at 64m. per 100 kilos. Carnauba, according to quality, is offered at 75m. to 120m. per 100 kilos.

Oils (Fixed).—Cod-liver is quiet and shows very little business at 80m. to 85m. per barrel for non-congealing oil. Castor oil, quiet. First pressing, in barrels, 56m. per 100 kilos.

Oils (Essential).—Peppermint is improving, HGH is now held for 5.30m. per lb. Japanese also dearer at 6½m. per kilo. Star-anise 15½m per kilo., and Russian anise 13m. per kilo. Cassia has a firmer tendency.

Cablegrams.

Hamburg, August 11, 11.48 a.m.:—Menthol has been advanced to 15½m. per kilo., and is in good demand. Crude camphor is a dull market at 223m. per 100 kilos. Japanese crude antimony has been advanced to 47m. per 100 kilos.

* * * *

New York, August 11, 2.54 p.m.:—A quiet market. American bleached beeswax is easy, at 26c. Coca-leaves are scarce and advancing. Mexican sarsaparilla irregular, at 6¾c. per lb., and may be lower. Citric acid strong, at 38c. per lb. Supplies of golden-seal root on the spot are scarce, and held for 45c. Senega maintains a strong position at the quotation given in my letter of August 2.

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42 Cannon Street, London, E.C.: August 11.

Acid, Citric.—Dearer. On Tuesday the price of English crystals was advanced to 1*s.* 3*d.* per lb. on the spot. There are, however, still a few sellers in second hand at 1*s.* 2½*d.* Concentrated lemon-juice has also been advanced to 18*l.* per pipe, c. and f.

Alcohol.—The market has undergone no alteration recently, quotations remaining firm on the basis of 9*d.* per gal. in bond for druggists' quality German potato-spirit, c.i.f. terms, packing not included. The price is likely to be unaltered until October, when the potato-crop is due.

American Drugs, Various.—The following are some current quotations for American drugs in wholesale quantities:—Wild-cherry bark, 2¾*d.*; sassafras-bark, 3½*d.* per lb.; simarubra, 5½*d.*, c.i.f.; euonymus bark of root, 8*d.*, c.i.f.; elecampane-root, 2¾*d.*, c.i.f.; podophyllum-root, 20*s.*, c.i.f.

Belladonna.—Foreign is offered at 40*s.*, and leaves at 45*s.*, per cwt., c.i.f.

Borax has a firmer tendency at unchanged prices.

Buchu.—A few bales of medium green round leaves are offered at 9*d.* per lb., but, so far, we do not hear of any business.

Cascara Sagrada has a firmer tendency. New bark has been sold this week in a small way, at 21*s.* 6*d.* per cwt. on the spot; for old bark 25*s.* is wanted in the same position.

Chamomiles.—Reports from the Continent indicate that only a poor harvest may be expected, unfavourable weather having hindered the formation of the blossoms, those in hand being small and brown. For new German the high figure of 250m. per 100 kilos. is asked, and for Belgian 70*s.* to 75*s.* is wanted by one agent here, but it is anticipated that lower prices will prevail as the season advances. English flowers are offered at 1*s.* 6*d.* per lb.

Cinchona.—The shipments from Colombo and Ceylon for the week ending July 19 were 15,684 lbs., all of which was exported to London. The shipments from January 1 to July 19, 1898, were 545,306 lbs.; 1897, 408,691 lbs.; and 1896, 685,321 lbs.

Cinchonidine.—A sale of 20,000 oz. sulphate at 6*d.* per oz. is reported this week, and there are further sellers at this figure. A considerable business has also been done in New York recently, some 100,000 oz. having changed hands at 12c. to 13c., and manufacturers have raised the price to 15c.

Cocaine.—Manufacturers are very firm, and are only offering sparingly at 9*s.* 3*d.* In second-hand it may be possible to slightly shade this quotation. Eight cases of crude from Callao have arrived per s.s. *Orinoco.*

Coca-leaves.—Good green Truxillo are offered at 7*d.* on the spot, and Bolivian at 8½*d.* per lb., c.i.f. The shipments from Java from July 1 to May 31, 1898, were 998 bales, as compared with 915 and 1.055 bales for the same period of 1897 and 1896 respectively.

COCOA-BUTTER.—About $2\frac{1}{2}$*d.* to $3\frac{1}{2}$*d.* dearer. At auction 30 tons Cadbury's brand sold at $13\frac{1}{8}$*d.* up to $14\frac{1}{4}$*d.* per lb., closing at $14\frac{1}{8}$*d.*

CREAM OF TARTAR.—The London market is a little easier, ordinary white crystals being quoted at 73*s.* to 74*s.*; and powder at 75*s.*; 95 per cent., 76*s.* to 77*s.*; and of B.P. quality (99 per cent.) powder, 80*s.* per cwt., all on the spot. The Bordeaux market is very firm, at 71*s.*, f.o.b., net.

GLYCERIN.—Firm, at 52*s.* to 53*s.* for English double-distilled, sp. gr. 1·260; and 54*s.* to 55*s.* for German of well-known brands. The exports of glycerin from the Russian port of Reval in 1897 amounted to 637*l.*, as against 8,233*l* in 1896.

GOLDEN SEAL.—The demand has been very active in New York, and 1*s.* $8\frac{1}{2}$*d.* per lb, c.i.f., is now asked for good autumn dug. It is thought that values will again be higher in September.

GUM ACACIA.—At to-day's auctions the demand was exceedingly slow; and of the 3,250 packages East Indian gums offered, only about 200 found buyers at the following prices:—Ghatti, good, 28*s.* to 30*s.*; fair, 26*s.* 6*d.* to 27*s.*; common, 14*s.* 6*d.* to 16*s.* 6*d.* Oomra, picked pale, 44*s.* 6*d.*; pickings, 20*s.* to 22*s.* Aden, fair frosted, 48*s.*; common red, 35*s.*; pickings, 20*s.* to 23*s.*; low dark siftings, 19*s.* 6*d.* Low dark Australian, 21*s.*

HENBANE.—First year's leaves are rather easier, owing to the rains having caused rapid growth, and it would now be possible to shade the late quotation of 3*s.* 6*d.* per lb. Foreign leaves are 45*s.* per cwt., c.i.f.

INSECT-FLOWERS.—During July 77,200 kilos. of the new-crop Dalmation flowers were received at Trieste, and 68,700 kilos. were delivered, leaving the stock at 265,600 kilos. of both old and new. The following are the current prices f.o.b. Trieste:—"Wild," 97*s.* to 102*s.*; closed, 76*s.* to 81*s.*; half-open, 49*s.* to 66*s.*; and open, 41*s.* to 44*s.* per cwt.

IPECACUANHA.—Cartagena is firmer, holders now talking of 5*s.* 6*d.*; but this price does not yet appear to have been paid. Rio is also very firm, at 9*s.* to 9*s.* 2*d.* There have been no arrivals for some weeks, and it is expected limits will be raised at the auctions on Thursday.

MENTHOL.—Dearer. A good business has been done this week both on the spot and for forward delivery at 7*s.* and 6*s.* 9*d.* per lb. respectively. Reports to hand this week say that the crop will be a short one.

OIL, BERGAMOT.—Is very firm at 9*s.* per lb. f.o.b. Messina for well-known brands. The stock both in London and Sicily is very low, and agents here glibly talk of 10*s.* in the near future. Reports from the centres of production state that the yield this year will be a light one, and the upward movement is based on the poor prospects for the new crop. From a trustworthy source we hear that the American dealers have shipped a quantity back to the European market in order to supply the shortage. Stocks, however, in the United States are light, and the shipment in question was exceptional.

OIL, CASTOR.—Has an easier tendency. First-pressing Belgian is 27*s.* 6*d.* spot; second pressing, 25*s.* 6*d.* for August shipment, ex wharf. Oil of British manufacture is unchanged at last week's quotations. Medicinal water-white Italian (A.A.A. brand) is 36*s.* to 37*s.* c.i f., while another quotation is 34*s.* f.o.b. Leghorn. French 28*s.*, ex wharf.

OIL, CLOVE.—The price of English has been advanced from 3*s.* to 3*s.* 3*d.* per lb., in consequence of the increased value of cloves.

OIL, LEMON.—Genuine oil has been sold this week at 3*s.* 10*d.* to 4*s.* per lb. c.i.f.

OIL, PEPPERMINT.—There are still sellers of HGH American oil on this market at 5*s.* 6*d.* on the spot, though in some cases 5*s.* $7\frac{1}{2}$*d.* is asked. New so-called Wayne County oil is likely to be dearer, and already there is a quotation of 4*s.* 2*d.*, c.i.f., in the market; old can be had at 3*s.* 9*d.*

OPIUM.—The London market is quiet at practically unchanged prices for both Persian and Turkey. The arrivals this week include 120 cases from Constantinople.

CONSTANTINOPLE, August 6.—Since the quiet close of the market last week there has been a slight reaction. Speculators have been operating on a small scale, and the sales for the week are reported to be 27 cases at the parity of 10*s.* 5*d.* per lb., f.o.b., for Karahissar. We do not expect to see any recession on to-day's prices for some time; in fact, if the present demand in Smyrna continues we may see higher prices. The Dutch Government solicits bids for 150 cases, but will probably buy more than this.

SMYRNA, August 1.—The sales of July amounted to 500 cases, 4 0 of which old current and Karahissar were taken by the United States. Of new crop about 20 cases only have been taken for England and the Continent. It is now estimated that the whole yield of the Turkey crop this year will not exceed 3,000 cases, as the hot weather in the early part of the month has interfered with the gathering. The stock of opium at Smyrna is estimated at 2,231 cases, and in Constantinople 377 cases.

PHENAZONE—The quotation of the principal manufacturer is unchanged at last week's prices. Agents for the French make do not think it necessary to make any absolute quotation, but say they are willing to submit bids.

POTASH PERMANGANATE.—Easier. Small crystals are now quoted at 55*s.* per cwt. in quantity.

SAFFRON has been advanced 5*s.* per lb. this week owing to the lowering of the Spanish exchange and the conclusion of the war. The finest Valencia is now 41*s.* 6*d.* per lb.; and lower qualities in proportion. Alicante, 26*s.* 6*d.*

SEEDS.—Russian *Anise* has been sold at 19*s.* per cwt. on the spot; to arrive, there are sellers at 18*s.* 6*d.*, c.i.f. terms. Dutch *Caraways* are steady, new crop offering at 19*s.* 9*d.* per cwt. f.o.b. There has been considerable speculative buying of Turkish *Canary-seed*, on the news that the crop now being gathered is short. Recent prices are the lowest on record, but stocks are fairly large and the trade demand is slow. Business has been done in f.a.q. Turkish at 24*s.* 6*d.* up to 27*s.* per qr, and higher prices are now asked. Clean Morocco *Linseed* sold at 44*s.* 6*d.* per qr. The exports of cumin-seed from the Russian port of Abo in 1897 amounted to 72,550 kilos., valued at 1,014*l.*, against 27,934 kilos., valued at 465*l.* in 1896.

SENEGA.—New York reports that no stock is offering from the country. The London market is firm, at 1*s.* 1*d.* per lb., c.i.f. terms.

SERPENTARY-ROOT.—From Texas it is reported that this article is coming in very slowly this year. Quotations remain firm, at 1*s.* 1*d.* to 1*s.* $1\frac{1}{2}$*d.* per lb. on the spot; or at $11\frac{1}{2}$*d.*, c.i.f.

SHELLAC.—The offerings at auction on Wednesday were very meagre—viz., 143 cases second orange and 20 cases button—which were in the hands of one firm of brokers. About 100 cases sold, at 63*s.* for good flat reddish second orange. Button bought in. Privately the market is very quiet.

SPICES—The public sales were resumed this week, but there was not much disposition to buy, and privately business has been quiet, with slight declines in the price of *Pepper* and *Zanzibar cloves*, and a rise in the value of *Pimento*. At auction Cochin *Ginger* was dull: bold cut sold at 80*s.* per cwt.; a few bags of good washed rough at 21*s.*; common Calicut at 20*s.*; and dusty cuttings at 12*s.* per cwt. Jamaica easier: only a small part of the quantity offered sold at 70*s.* to 75*s.* per cwt. for ordinary to middling. Japan firm, with small sales at 18*s.* per cwt. A few bales of Zanzibar *Cloves* sold at $4\frac{7}{16}$*d.* per lb. for good quality. October-December delivery has sold at $4\frac{1}{2}$*d.* to $4\frac{7}{16}$*d.*; and January-March at $4\frac{5}{8}$*d.* to $4\frac{1}{2}$*d.* per lb. Penang sold at $7\frac{1}{8}$*d.* to $7\frac{1}{4}$*d.* per lb. for fair picked; $11\frac{1}{2}$*d.* being refused for fine. *Pimento* sold at $4\frac{7}{8}$*d.* per lb. for common; and at 5*d.* for middling clean. Japan *Chillies* withdrawn at 33*s.* per cwt. for ordinary. Natal *Capsicums* sold at 75*s.* per cwt. Singapore *Back pepper* easier, at $4\frac{3}{4}$*d.* per lb. on the spot; and at $5\frac{1}{32}$*d.* for September-November shipment. Singapore white is quoted at $8\frac{15}{16}$*d.* to arrive; and Penang at $7\frac{15}{16}$*d.* for near positions. *Cassa lignea* firm, at 53*s.* per cwt.

SUGAR OF MILK.—Fine white American powder has recently been reduced to 52*s.* 6*d.* per cwt. to meet competition.

Correspondence.

Rival Soaps.

SIR,—Referring to the report in your issue dated August 6 of an action brought by Messrs. J. Crosfield & Sons (Limited) against Messrs. Sharp Brothers' Soap and Perfumery Company (Limited), I desire to call your attention to the fact that the report is of a case now pending upon which an interlocutory application has been made.

The report contains at great length the speech of Mr. Upjohn, Q.C., counsel for the plaintiffs, but only a few lines are devoted to the speech of Mr. Jenkins, Q.C., for the defence, which, if properly reported, would have shown that the statement that the soaps of both parties had been analysed by *experts* is quite untrue.

The fact is the plaintiffs have had them analysed by their own analyst only, and not by "experts" in the plural as stated in the report, and which seems to imply that the statement of counsel was supported by expert evidence on *both* sides.

This can hardly be called a fair report, the evidence being one sided; but when the proper time arrives the defendants will doubtless have the soaps analysed by an independent analyst, and will probably be able to prove their contention that their Russian Violet Soap is not inferior to the plaintiffs' soap, but considerably superior.

I beg to remind you that the case has not been decided in any way; but that in order to meet a suggestion of the Judge my clients have thought fit to offer to make some alteration in their wrapper, and the whole case will be decided by the Judge himself at the trial of the action. Until then no further report of it ought to be published, and you will probably agree that unless both sides are fully reported a wrong impression is likely to be made on the minds of the public.

I shall be glad if you will insert this in an equally prominent position in your next issue.

I am Sir, &c., your obedient servant,
MATTHEW H. HALE,
Solicitor for the Defendants.

Holborn Town Hall, W.C.,
August 5.

SIR,—From your report of the case of Crosfield *v.* Sharp it appears that the plaintiffs claim to be the originators of floral window-displays. We shall be glad if you will allow us to protest against their claim. We believe we were the first to make floral window-displays. Long before we heard of Erasmic soap we had used thousands of bunches of violets, moss, leaves, &c., in making displays to assist the sale of Grant et Cie.'s violette de Parme perfume and soap; while buttercups, daisies, moss, &c., accompanied dairymaids and cows on their advertising-mission on behalf of Buttermilk Ball soap.

Our displays have been largely copied, and our "happy idea" of placing flowers round the neck of each bottle has found many imitators in the perfumery-trade.

Yours faithfully,
36A Aldersgate Street, F. SCHUTZE & CO.
London, E.C., August 10.

The Attack on Vested Interests.

[The following letter was addressed to the editor of the *Daily Mail*, but did not appear.]

SIR,—Some correspondence has been lately started under the above heading. Was ever a cry more groundless? What are the "vested interests" which are assailed? The right to do without qualification what the law says may only be done by those who hold the qualification required by law. To quote the address of Mr. Godden, the President of the Incorporated Law Society, at Sheffield last year: "When the Crown surrendered its prerogative, and Parliament gave up its control over the creation of corporations, individuals were allowed to incorporate themselves at pleasure for any lawful purpose." This is the limit of their freedom; but, unfortunately, no method was provided, nor has yet been provided, by which the persons incorporated for an unlawful purpose can be proceeded against; all the care has been to protect the members and creditors of the company, but it never was intended that it should be competent for seven unqualified persons to do what six unqualified persons could not do. The cry of "vested interests" now raised is no more than that of the rogue who claims that "possession is nine points of the law," and holds property belonging to others by the simple reason that the rightful owner has lost the title-deeds, which may be in the rogue's pocket all the time. They exist only by reason of a defect in the law, which leaves aggrieved persons unable to prove against them; this has now been pointed out, and Parliament is asked to provide the remedy. Capitalists, through incorporation, have usurped a position which has been left so long unquestioned that now they try to obtain the sympathy of the general public by alarming company shareholders into the idea that they are about to be deprived of a lawful right.

The professions, one and all, are equally affected. Parliament has defined their status and rights. Parliament has said, for the protection of the public and with a view to public safety alone, certain callings may not be followed except by persons who have proved their competence by education and examination, and persons expecting that this restriction will be respected and maintained have, at expense of time, labour, and money, gone through all the stages necessary to prove themselves qualified to practise in a particular calling. Have they not a vested interest to be respected?

The question is which vested interest is to be maintained? that acquired by the law or that seized by a lapse of law.

I am, &c.,
ROBERT J. DOWNES,
President Pharmaceutical Society of Ireland.

Analytical Chemist by Examination.

SIR,—I was pleased to see in your last issue the proposal of the formation of a Pharmaceutical examination giving the necessary qualification of "analytical" chemist. Mr. Vallet says: "Would it not be feasible for the Society to establish an examination to be passed 'after the Major?'" Might I go one step further and propose that the Major examination itself be reconstructed, so that it should not only give (as it does at present) the empty title of pharmaceutical chemist, but also the more substantial qualification of "analytical chemist"?

Now that the Pharmacy Act Amendments Act is law, who is going to spend time and money to be allowed to merely call himself "pharmaceutical chemist"? Whereas, if the Major gave the "analytical" qualification as well as the Ph.C., I do not think the Society would have cause to grumble at the declining number of students presenting themselves for the Major.

Sincerely yours,
Long Eaton, August 6. H. B. STEVENS.

SIR,—I quite agree with Mr. Vallet that the more capable assistants are going in for the dental, medical, and analytical professions. As one who has recently passed the Major, I am anticipating going in for the latter, and, being a provincial man, the "F.I.C." is entirely out of reach. As a compromise, the "B.Sc." is left, and a look at the chemistry syllabus (Lond.) shows one directly that, so far as analytical work is concerned, it is in a worse plight than the Major. Could not such things as analyses of milk, water, urine, coal, coke, &c., be readily added on to this examination?

Undoubtedly the great drawback to the Major is the small amount of mathematical knowledge required. The present Preliminary has a good deal to answer for in that respect, but when the new Preliminary comes in it is to be hoped that this drawback will be speedily removed.

The greater part of the magnetism and electricity and botany would be as well added to the Minor syllabus; and the Major standard in chemistry, physics, and botany raised, adding to this latter a little biology. I have found nothing more useful than a knowledge of this science.

The need of a knowledge of magnetism and electricity to every chemist is growing every day, and if the pharmaceutical qualifications are to be worth anything they must be kept up to date.

It is admitted that the Major knowledge is rarely, if ever, required in an ordinary chemist's shop. Why not, then, make it useful for something else? The opinion of someone in authority would be interesting on this subject.

Yours truly,
A MAJOR ASSISTANT. (7/23.)